

FEBRUARY

1947

CHEMICAL PREVIEW

In this issue

Articles Covering

NEW SOLUTIONS to
PLANT PROBLEMS

DEVELOPMENTS in
PRODUCTION MATERIALS

PROCESS INSTRUMENTS
and CONTROLS

PRACTICAL IDEAS
ADAPTABLE to PROCESSING
MACHINERY and EQUIPMENT
DEVELOPMENTS

Rubber expansion joint eliminates transmission of vibration from circulating pump — takes up stresses due to expansion and contraction.



• Calcium Acetate, Purified

This B&A Purity Product . . . assays 99% min. $\text{Ca}(\text{C}_2\text{H}_3\text{O}_2)_2 \cdot \text{H}_2\text{O}$. It is a white, uniformly-sized powder offering many advantages over ordinary acetate of lime for a wide range of applications: in liming rosins for varnish manufacture; in preparation of metal resins and metallic soaps for many industrial uses; in the manufacture of pharmaceuticals, synthetic resins, etc.

FINE CHEMICALS . . .

• Cuprous Chloride, Tech.

Uniform, grayish-brown powder assaying in excess of 90% CuCl . Here is another B&A Quality Chemical markedly superior to the usual commercial and technical grade products. Has a wide range of applications: in manufacture of paint pigments, colors for fireworks, and vat dyestuffs; and as a mordant for fixing lake colors, etc.

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Colorless 9-water crystal available in two grades—Reagent and Purified. The extremely high quality and very low limits of impurities of the Reagent grade make it particularly adaptable to use as a source of aluminum oxide in manufacture of fluorescent lamps, incandescent light bulbs, and radio tubes. The Purified grade offers a quality suitable for less exacting uses: as a mordant in textile printing, and as a raw material for manufacture of aluminum oxide and silica-alumina catalysts for the Petroleum Industry.

From Coast to Coast

From Coast to Coast—wherever *quality chemicals* are required in *quantity* for manufacturing processes of the day—B&A Fine Chemicals are the first choice of Industry. That is because they are reliable products of consistently high quality and uniformity . . . products made with all the skill and science B&A has gained in 65 years

of "Setting the Pace in Chemical Purity."

Above are but three of the Fine Chemicals commercially available today from the Baker & Adamson Division of General Chemical Company. Scores more await your investigation, too. To learn more about those that meet your needs, write or 'phone nearest B&A Office below.



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SETTING THE PACE IN CHEMICAL PURITY SINCE 1882

* Complete stocks carried here.

"That's Interesting"

Biggest Spherical Bearings Are Four Feet In Diameter

Machining operations were recently begun on the two largest spherical bearings ever made in the U. S. at SKF Industries, Inc. Philadelphia. Each will weigh 5100 pounds and measures four feet in diameter and is designed for a basic load of more than 4 million pounds. The bearings will be used in a paper pressing machine being built by Beloit Iron Works for the Niagara, Wis. paper mill of the Kimberly-Clark Corp.

America Grows Cork

America grows cork. A thousand pounds of cork was recently stripped from trees in California, six years after the first or virgin bark had been removed. The second growth bark ranges between one and one half inches thick and is of first grade commercial quality. During the past six years more than twelve tons have been removed from 500 trees. The home grown product is equal to the imported material of the same grade.

Sauerkraut — Lemon Sherbert

A sauerkraut-lemon sherbert was prepared for the luncheon of the National Kraut Packers Assn., held recently in Cleveland. In the sherbert, sauerkraut has the crispness of cocoanut with a dainty subtle flavor that tones down the tartness of the lemon and the sweetness of the sugar.

44,000,000 Sheep — Count 'em

There are approximately 44,000,000 sheep on our farms. Not all are shorn in one year. Shorn wool in 1946 amounted to approximately 287,000,000 pounds and in addition about 55,000,000 pounds of pulled wool was obtained from slaughtered sheep. The average fleece weight per sheep is 7.9 pounds (As reported in the Lamp — Standard Oil Co.)

Charcoal Retards Ripening

Cornell University scientists find that containers of charcoal in apple cold storage keeps fruit fresh longer by delaying ripening — adding 20% to storage life.

Gas Fumes Fade Dress Colors

City women find that colored frocks of acetate rayon sometimes lose their colors prematurely. Investigation discloses that this reaction is caused by gas fumes in the atmosphere. A new product Du Pont Anti-Fume Paste, which is added in small amounts at the mill when the fabric is dyed, will retard this fading.

Soap Substitute from Sulfonated Petroleum

An efficient soap substitute has been made from sulfonated petroleum, Dr. Chester M. Suter, associate director of Sterling-Winthrop Research Institute at Rensselaer, N. Y., reported recently to the American Chemical Society. In an address, Dr. Suter described a new method for sulfonating petroleum compounds which was used in axis countries during the war to offset the scarcity of soap and other cleansers.

70,000 Patent Applications in 1945

During most of the war, patent applications dropped. There were less than 45,000 in 1943, as compared to 65,000 in 1939. Now, applications are again 'way up. Nearly 70,000 applications were filed in 1945.

Service Trucks Equipped for "On-the-Spot" Boiler Repairs

A New York company specializing in steam boiler repairs "on the spot" operates a fleet of welding trucks. Part of each truck's standard equipment is a supply of "Ni-Rod" electrodes with which they repair cast iron and weld cast iron to steel. (From International Nickel Mechanical Topics.)

(Continued on next page)

"That's Interesting"

Automatic Salve Dispenser

A west coast inventor has perfected an automatic salve dispenser consisting of a disc mounted on a threaded "R" Monel tube. As the disc is depressed into the jar, the salve is dispensed through the tube in exactly the amount desired. The item is manufactured by Drillmaster Corporation in Los Angeles.

Regulators Control Heat to 1/10 of a Degree in R R Cars

A new electronic heating and air-conditioning control system that does the work hitherto handled by porter or conductor and controls temperature changes to as little as one tenth degree in railroad cars was recently demonstrated. It combines radiant panel heating with warm air heating and uses a newly developed anti-freeze liquid about the consistency of water. Temperatures can be controlled in individual rooms to the wishes of the occupants in contrast to the present systems which maintain the same range throughout the entire car. (Minneapolis-Honeywell Regulator Co.)

Cottonseed Oil Futures Market

Plans for a new market for cottonseed oil future trading on the New York Stock Exchange has been discussed. A cottonseed oil futures market is now in operation on the New York Produce Exchange. It has been recommended that trading be established along the lines of the present Wool Assn. and the New York Cotton Exchange Inc.

Patent Number 60 Strawberry Suitable for Frozen Pack

One of the most interesting plant patents reported in Domestic Commerce for December is Number 60 covering a strawberry. The quality of the berry is suitable for frozen pack or late fresh market trade. Among its outstanding features are its canning quality and its adaptability to a wide range of soils. The stalks are fairly heavy and erect, holding the berries off the ground. It is similar to the Marshall variety but is more acid and fragrant than Eiterburg Number 121.

Potash Production for 1946-47 Placed at 900,000 Tons

Government estimates place the 1946-47 potash output at 900,000 tons. Approximately 90 per cent of our potash production is used in agriculture. All 48 states consume potash but 40 per cent has customarily been delivered to five southeastern states — Florida, Georgia, North Carolina, South Carolina, Virginia. Fruits and vegetables use 21 per cent; corn and cotton, 18 per cent. The remaining 43 per cent is divided among other crops, including wheat, tobacco, potatoes.

(Continued on inside back cover)

For more information on product at right, specify CP 335 . . . see information request blank between pages 2-3.

Announcing IMPROVED DESIGNS

FOR PFAUDLER "E" SERIES

Glass-Lined Steel REACTORS . . .

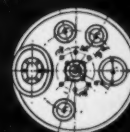
Overall Construction Strengthened, Jacket Pressures Increased

SINCE 1927, Pfaudler's standard clamped-top, highly acid-resisting, glass-lined steel reactors have been specified wherever contact with metal proved undesirable. Processes involving hydrochloric acid at elevated temperatures and pressures are among the important applications as Pfaudler glass is resistant to all acids, except HF. Throughout this period, capacities have been increased and design improvements made to do each job better.

In line with this policy, Pfaudler announces further improvements, effective immediately. All "E" Series units will be built with straight rather than tapered side wall construction. This permits an increase in jacket pressure ratings from 75 to 90 psi, sufficient for the majority of "E" Series applications. (Higher pressures obtainable with special designs.) See drawing for other highlights. All details will be covered in new catalog which will be available later. However, these changes apply on "E" Series orders now outstanding, except where operating conditions require special construction.

New hinge with swing clamps for manhole cover permits quick opening. Reversible opening with 4" observation glass for better visibility.

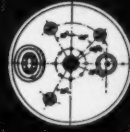
Straight wall construction strengthens overall design, increases actual capacity. See table below.



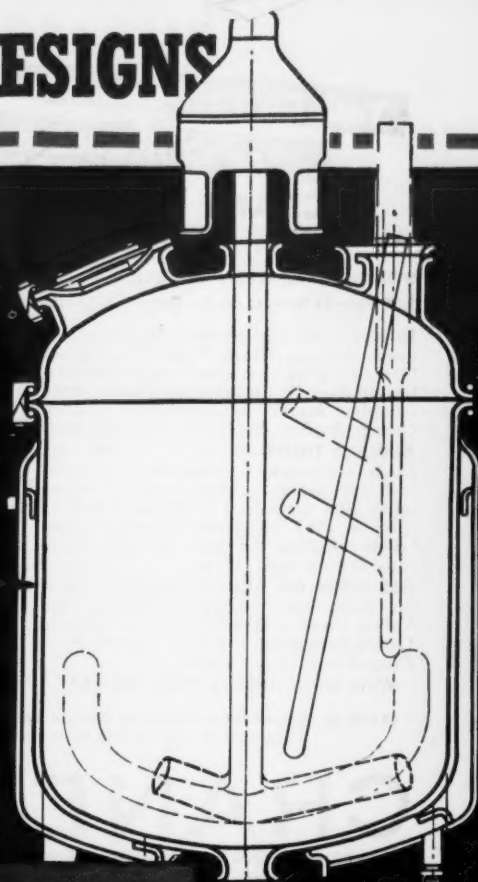
Top Head Layout "EM" Series



Top Head Layout "EL" Series



Top Head Layout "ELL" Series



Welded diaphragm outlet replaces packed stuffing box. Permits increased jacket pressures.

Agitating nozzle in jacket of heating or cooling medium reduces bottom heat. Efficiency improved.

Note "ES" top head (not shown) include 9" x 12" handhole, 3-4" openings and 3 1/4" agitator opening.

How Capacities Have Been Increased

Series	Rated Cap.	Actual Cap. Old Design	Actual Cap. New Design
"ES"	50 gals.	56 gals.	56 gals.
	75 gals.	81 gals.	83 gals.
	100 gals.	107 gals.	110 gals.
"EM"	150 gals.	165 gals.	180 gals.
	200 gals.	203 gals.	225 gals.
"EL"	200 gals.	207 gals.	236 gals.
	300 gals.	304 gals.	345 gals.
"ELL"	500 gals.	514 gals.	565 gals.
	750 gals.	783 gals.	850 gals.

THE PFAUDLER CO., Rochester 4, New York, Branch Offices: 330 West 42nd St., New York 18, N. Y.; 111 W. Washington St., Chicago 2, Ill.; 1325 Howard St., San Francisco 3, Calif.; 818 Olive St., St. Louis 1, Mo.; 7310 Woodward Ave., Detroit 2, Mich.; 1318 1st Nat'l Bank Building, Cincinnati 2, O.; 1041 Commercial Trs. Building, Philadelphia 2, Pa.; 751 Little Building, Boston 16, Mass.; Box 982, Chattanooga 1, Tenn.; Enamelled Metal Products Corp., Ltd., Artillery House, Artillery Row, London, S.W. 1, England.

Pfaudler

THE PFAUDLER CO., ROCHESTER 4, NEW YORK
ENGINEERS AND FABRICATORS OF CORROSION RESISTANT PROCESS EQUIPMENT

You Can't Beat 'Em For Quick Cleanout

CRANE Iron Body Clamp Gate Valves

WORKING PRESSURES: Up to 150 Pounds Saturated Steam;
225 Pounds Water, Oil, or Gas, Non-Shock.

In piping services where valves need frequent cleaning, Crane Wedge Disc Clamp Gates simplify and speed such work. Just loosen their "U"-bolt bonnet joint and the complete bonnet assembly lifts out, including the disc. Replacing it is just as easy.

ALWAYS TIGHT—With these valves, you can afford to take time for regular inspection and servicing that result in longer valve life. Repeated opening of bonnet joint doesn't affect its tightness. Also, Crane design in the seats and disc insures long-lasting tight closure.

ALL-IRON OR BRASS-TRIMMED—Ideal for many services, Crane Clamp Gate Valves come in OS&Y; Inside Screw; and Quick-Opening patterns; screwed or flanged ends. Sizes up to 4 in.

Write for Descriptive Folder AD-1667

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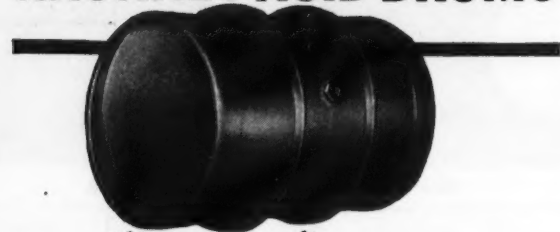
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VALVES • FITTINGS • PIPE • PLUMBING AND HEATING

When inquiring specify CP 336—see handy form pages 2-3

HACKNEY ACID DRUMS



longer life
greater strength
uniformity
easy cleaning

Hackney Acid Drums have no longitudinal or chime seams... only one circumferential butt weld located between and protected by two I-bar, rolling hoops. Bung failures are minimized by special heavy forged spuds attached by a two-pass weld. After fabrication, special heat-treating increases resistance to corrosion. Extra strength

and prolonged life are added by use of reinforced chime protectors. The smooth interior, entirely free of cracks and crevices, assures easy cleaning.

Thus, the Hackney Acid Drum's seamless, cold-drawn construction assures longer life and more trips, making it the most economical container in the long run. Write for details.

Hackney Pressed Steel Tank Company
Manufacturers of Hackney Products

1463 South 66th Street, Milwaukee 14 208 S. Le Salle St., Room 2085, Chicago 4
1387 Vanderbilt Concourse Building, 568 Roosevelt Building, Los Angeles 14
New York 17 235 Hanne Bldg., Cleveland 13, Ohio

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CHEMICAL PREVIEW

Edited for Production and Laboratory
Men in the Chemical Process Industries

VOL. 10

FEBRUARY, 1947

NO. 2

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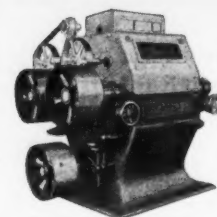
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OUTSTANDING EFFICIENCY
LOW OPERATING COST
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IMPROVED "46"

ROLLER MILL



Like all the other machines in the complete SPROUT-WALDRON line, S-W's IMPROVED Roller Mill is expertly designed and engineered. Famous for its outstanding efficiency on large-volume production, this machine is exceptionally economical and easy to operate. Call your Sprout-Waldron representative or write for complete details on the Sprout-Waldron line... the machinery you need for truly efficient production.

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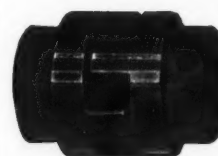
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NOW! A Special Flexible Coupling that WILL NOT SPARK!

Essential in Chemical,
Paint, Varnish Plants, in
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Lovejoy L-R Type "A"
1/6 to 40 H.P. Pat. and
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You need the LOVEJOY L-R Type "A" Flexible Coupling wherever there is danger of static or electrical discharge into explosives, inflammable gases, vapors or liquids. Efficient correction of misalignment etc. between drive and driven machines. Simple 3 piece construction. Write for catalog. Couplings to 2500 H.P.

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NO LUBRICATION
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Also Mfrs. of the IDEAL Line of Variable Speed Transmissions
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When inquiring specify CP 339—see handy form pages 2-3

An Announcement

Chemical Preview now 12 Issues Yearly

Beginning with the January 1947 issue, CHEMICAL PREVIEW will be published monthly instead of every other month as it has been in the past. This change in frequency of issue will enable CHEMICAL PREVIEW to speed up its service of furnishing live, timely news of new ideas, new solutions, new materials, etc., to the chemical processing industries.

The Cover

In many pieces of large heavy equipment, expansion and contraction must take place without damage or disturbance to adjoining units. Pictured on the cover is a large circulating pump on which are installed 72" rubber expansion joints. Their use stops the transmission of vibration which would result from rigid connections. An article describing this product appears on page 44.

How To Get More Product Information

To make it convenient for readers to locate information in CHEMICAL PREVIEW there is . . . on page 61 . . . a complete directory of all products that are featured in editorial articles or described in the advertisements in this issue; On page 62 you will find a list of the advertisers whose products are described in this issue; And to make it easy for you to secure additional information quickly there is a handy request slip inserted between pages 2 and 3.

How To Get This Magazine Regularly

The circulation of CHEMICAL PREVIEW is restricted to a selected list of individuals who are actively engaged, in responsible capacities, in chemical processing plants — chemists, engineers, production and management executives. Subscriptions are NOT SOLD. There is no charge or obligation for the service.

If you would like to receive the magazine regularly, send your request on your company letterhead to the publishers, or use request form inserted next to the back cover. To have your request receive prompt consideration give your title, company's name and main product of your firm. Request should be sent to Circulation Director, CHEMICAL PREVIEW, 737 North Michigan Avenue, Chicago 11, Illinois.

Have You a New Product?

If you have recently developed a new or improved product, a piece of laboratory or plant equipment or a new material, of specific interest in any line of chemical process manufacturing . . . send information regarding it to our editors.

If it meets their requirements, they will introduce it to the chemical processing industries through the editorial pages of CHEMICAL PREVIEW. More than 25,000 copies of this publication are effectively distributed through the chemical processing industries.

This service costs you nothing and there is no obligation. Write — The Editors, CHEMICAL PREVIEW, 737 North Michigan Avenue, Chicago 11, Illinois.



**can YOUR equipment
absorb a JOLT?**

Check the effect of unstable voltage on your product

<input type="checkbox"/> Short Tube Life	<input type="checkbox"/> Circuit Unbalance
<input type="checkbox"/> Poor Operation	<input type="checkbox"/> Loss of Accuracy
<input type="checkbox"/> Customer Dissatisfaction	

THERE ARE NO VOLTAGE PROBLEMS WHEN A SOLA CONSTANT VOLTAGE TRANSFORMER IS A "Built-in Component"

Check! . . . before the equipment leaves your plant. Can it stand violent voltage fluctuations, sometimes as great as 30%, and still perform as you intended it should?

It is not necessary, you know, to saddle your customer with the responsibility of providing stable operating voltage. You can do it for him at an actual saving, both in original cost and maintenance, by including a SOLA Constant Voltage Transformer as a "built-in" component.

There are 31 standard types of SOLA Constant Voltage Transformers, several specifically designed for chassis mounting, available in capacities from 10VA to 15KVA. If none are adaptable to your requirements, special units can be custom designed to your exact specifications.

Whether your product is designed for home, science or industry—Constant Voltage is your problem. May we recommend the solution?

SOLA

Constant Voltage TRANSFORMERS

Transformers for: Constant Voltage • Cold Cathode Lighting • Mercury Lamps • Series Lighting • Fluorescent Lighting • X-Ray Equipment • Luminous Tube Signs
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This book provides the answer to your Constant Voltage problem.

Ask for
Bulletin 41CV-102

When inquiring specify CP 340 . . . see information request blank, pgs. 2-3

STREPTOMYCIN STERILITY

Guarded by Germicidal Lamps

New Solutions



Air-borne bacteria and micro-organisms destroyed by ultraviolet.

PROBLEM — In the new plant of Merck & Co., Rahway, N. J., where Streptomycin is being made in large scale production, the problem of sanitation is extremely important. In the processing and packaging building, sanitation in every nook and corner is a "must" in this delicate operation. Every means of securing the highest degree of sterility is necessary.

SOLUTION — Air borne bacteria and micro-organisms are destroyed by means of ultraviolet lamps. These are installed in working areas that are sealed cubicles or compartments. Workers are required to wear white clothing and must observe stringent rules for maintaining sterile conditions. Operators subdivide, weigh and place the Streptomycin in small vials which are immediately closed with rubber stoppers. Ultraviolet tubes are located immediately over the processing table in the cubicle and also mounted on top of the ceiling fluorescent lighting fixtures. The lamps give off a characteristic purplish glow. Further, at each point where "spot" exposure of Streptomycin may take place, additional germicidal fixtures are installed. Vials are placed on an endless conveyor belt and sent on their way to be finally packaged. As an additional precaution, ultraviolet is used to give a final treatment to any malingering bacteria. On the belt, vials pass through a tunnel in the wall and under a Hanovia lamp to an aluminum cap machine just outside the sterile area. Besides providing the last protective curtain, the ultraviolet irradiation prevents impure air from entering back through the tunnel.

Various types of lamps are available for specific uses. In each case recommendations from the manufacturer should be secured for any application so that the correct lamp is used to meet the problems and conditions in a plant.

RESULTS — The use of ultraviolet lamps reduces substantial losses in the drug industry by eliminating air-borne bacteria and micro-organisms. They also help to reduce contamination of the product. Proper ultraviolet tubes will kill air-borne bacteria and micro-organisms that cause mold and slime on certain products. Complete information and recommendation for any specific installation will be supplied by the manufacturer.

HANOVIA CHEMICAL & MFG. CO., Dept. CP, Chestnut St. & N. J. R. R. Ave., Newark 5, N. J.

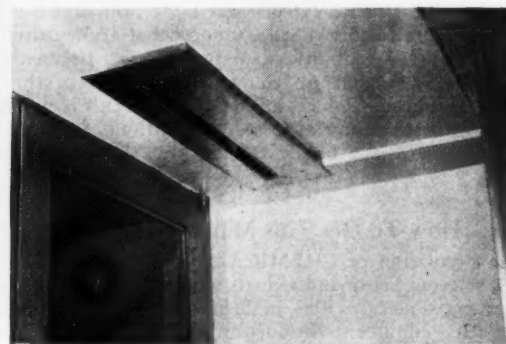
When inquiring specify CP 341 — see handy form pages 2-3



Vials of finished streptomycin, passing under germicidal lamps, are carried from sterile area to aluminum cap machine.



Containers of semi-finished streptomycin being exposed to ultraviolet rays.



Germicidal lamps set behind stainless steel plates in "sterile locks" provide insurance against contamination.

Pull Drawer Oven Design Eliminates Obstructions by Unique Puller Mechanism

*One or all drawers easily pulled or pushed by one man;
useful for baking finishes, drying chemicals, etc.*

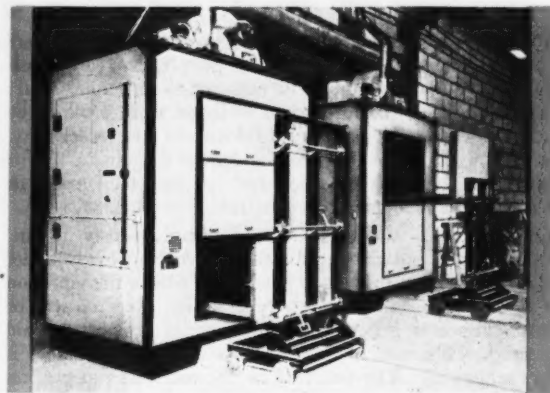
PROBLEM — In various processing operations the advantages of drawer type ovens for processing batches of work per drawer are desired but with the elimination of certain disadvantages generally encountered. To suspend and support drawers pulled out of conventional ovens of this type in order to charge-discharge them, a heavy structural steel overhead track

is required as well as reinforcement of the oven itself. This overhead track projects permanently into the space in front of the oven. Also, the superstructure necessitates placing the air heater (where used) at a higher point above the oven roof. This entails an additional problem where there is not much head room. For utmost efficiency it is desired that one drawer may be

CHEMICAL PREVIEW

loaded at a time without disturbing other drawers. Also the advantage of handling fairly heavy loads on multiple drawers and securing the desired treatment of all the work is sought, as well as continuous operation of the process.

SOLUTION — A new type pull drawer oven has been developed which is so arranged that all the superstructure is eliminated, and instead the drawers are supported on a puller mechanism set on a simple channel iron base frame riding on ball bearing wheels in a track guide on



2 and 3 drawer pull-drawer ovens

the plant floor. The puller engages any one or all of the drawers and is easily pulled or pushed by one man. When all drawers are inside the oven, the puller base projects no more than 15 inches in front of the bottom of the oven. Thus fans, heaters and motors may be set directly on the oven roof, reducing overall equipment height. The photo shows two such ovens, one with three drawers, and one with two drawers. These drawers have a subway grating over the shelf area, suitably reinforced to carry the load. They ride on frictionless rollers at the rear of the drawer and are supported at the front by the grab hooks which engage the cleats on the front panel of each drawer.

The oven itself is of the maker's insulated dual panel no-throughmetal construction throughout, suitably reinforced in a steel framework. In this particular installation heat is supplied by electric heaters, nested at one side and baffled from the heating chamber. There is a door at side for inspection and service. Where gas, oil or steam heating is desired an air heater may be installed on the oven roof, or gas or oil burners may also fire into a combustion chamber at one side of the oven. Heat is drawn from the heater (or combustion chamber) through a recirculating fan on the roof, discharging into a slotted supply duct at the other side wall and blowing horizontally across the work, returning through the heater in a rapid, constantly recirculating motion. An exhaust fan on the roof is supplied where required for purging the oven of undesirable vapors.

RESULTS — gives complete compactness and flexibility as to capacity, heating time cycle, each of handling work loads one drawer at a time without disturbing others in the oven. Large and small loads and large quantities of pieces are handled almost continuously. Fairly heavy loads on multiple drawers may be heated with the assurance of desired treatment of all the work. Floor space is kept clear when loading and unloading. There are no overhanging obstructions. This type of oven has proved itself satisfactory for core baking, mold drying, baking finishes, curing plastics, drying chemicals. **GEHNRICH OVEN DIV. (W. S. Rockwell Co.), Dept. CP, Fairfield, Conn.**

When inquiring specify CP 342 — see handy form pages 2-3

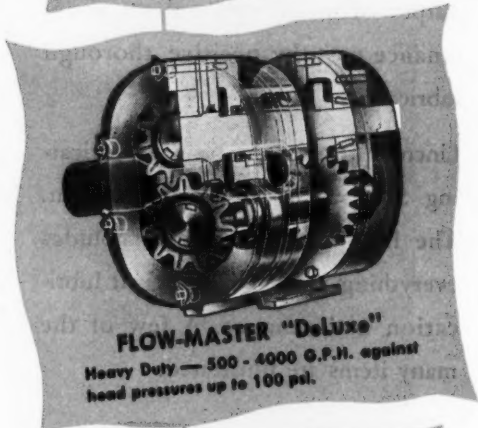
FEBRUARY, 1947

FLOW-MASTER

PRECISION STAINLESS PUMPS



FLOW-MASTER "Victor"
5 - 300 G.P.H. Displacement to suit requirements.



FLOW-MASTER "DeLuxe"
Heavy Duty — 500 - 4000 G.P.H. against head pressures up to 100 psi.



FLOW-MASTER "Commander"
500 - 4000 G.P.H. against head pressures up to 750 psi.

LAST LONGER . . .

METER MORE ACCURATELY . . .

HAVE NO STUFFING BOXES . . .

FLOW-MASTER Pumps are setting the standard for America's Process Industries. They last longer because of their revolutionary new *design*: The rotors are hydraulically balanced and thus severe metal-to-metal contact is minimized. The design also incorporates a unique automatic wear control feature, with the result that FLOW-MASTERS maintain volumetric efficiency longer in spite of normal wear which must inevitably occur. FLOW-MASTERS meter with extreme accuracy. They develop none of the packing troubles characteristic of conventional pumps. They are stainless, sanitary, easy to clean.

Other important features of the FLOW-MASTERS are detailed in the Marco Catalog 25-B. Send for a copy.

**FLOW-MASTER Pumps—Homogenizers
Kom-Bi-Nators
Equipment For The Process Industries**



MARCO COMPANY Inc. Wilmington 50, Del.

When inquiring specify CP 343 . . . see information request blank, pgs. 2-3

REDUCE

Production Losses



LINCOLN LEVER TYPE GREASE GUN—

A heavy-duty grease gun that develops 10,000-lbs. pressure. Has 17-ounce capacity.



LINCOLN 400-LB. HEAVY-DUTY DRUM PUMPS—

Pump lubricants, sealing compounds, insulating compounds, putty and other viscous materials direct from original containers.



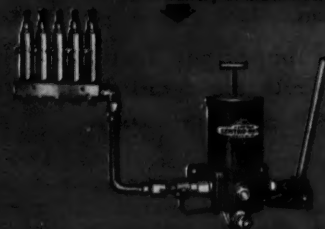
LINCOLN PUSH-TYPE GREASE GUNS—

Available in 9 and 15-ounce capacities.

LINCOLN HIGH-PRESSURE ROCK-ET PUMPS—30-lb. capacity high-pressure grease guns. Manually operated. Portable.



LINCOLN CENTRO-MATIC LUBRICATING SYSTEMS—Consist of a Lincoln Lubricant Pump connected to a series of injectors, (one for each bearing), through a single supply line. Pump can be hand-operated or power-operated with time clock or push-button control. These systems can be installed to supply a single machine or a battery of machines.



LINCOLN GREASE FITTINGS—All sizes—All types. A complete line for all industrial requirements.



LINCOLN 100-LB. HEAVY-DUTY DRUM PUMPS—Same features as 400-lb. unit.

CAUSED BY... FAULTY LUBRICATION

Steadily mounting production costs due to higher priced raw materials and increased payrolls is a problem that management must overcome if profits are to be maintained.

Every maintenance superintendent can help increase the service life and output of machinery, and cut maintenance cost, by positive, thorough lubrication.

Lincoln provides the proper Lubricating System for every application. The line is complete and includes everything needed for efficient lubrication maintenance. A few of the many items are illustrated.

Ask Your
LINCOLN
WHOLESALE!

LINCOLN

844-20

Pioneer Builders of Engineered Lubricating Equipment

LINCOLN ENGINEERING COMPANY
5701 NATURAL BRIDGE AVE., ST. LOUIS 20, MO., U. S. A.

New Solutions

Mountings of Felt Discs Provide 80% Vibration Isolation Efficiency

*Air borne noises reduced; noise level conditions
in plant areas improved*

PROBLEM — In dealing with the isolation of machinery vibrations a number of factors are involved: (1) Possibility of reducing vibration or noise of the machine itself; (2) Selection of the method of isolation as determined by such considerations as pressure loads of the machinery. For example, where loads are under 50 lbs. sq. in. felt is used effectively; (4) Selection and application of materials or means involved as in this case, felt.

SOLUTION — Wool felt is used advantageously in various vibration isolation applications involving loads under 50 lbs. per sq. in. It is often possible to reduce the vibration or noise produced by the machine itself. Replacement of worn parts and general tightening up of connections aid material. The use of felt washers at strategic points is also suggested. The isolation of the machine can be provided by inserting the most suitable felt under the supporting legs or base, between the machine and its foundation in a prescribed manner. Such felt isolation decreases vibration and noise ordinarily transmitted through the base of the machine and to other parts of the building. Sometimes no great reduction of air borne noise is apparent after isolation, but considerable improvement in noise level conditions of vibration may be noticed in other parts of the building. In designing felt isolation, it is important to avoid conduction through bolts or other devices for anchoring the machine to its foundation. To prevent any sidewise motion of the machine from a fixed spot: (1) short studs may be used which protrude part way into the felt from top and bottom or (2) the felt may be glued with suitable adhesives to both foundation and the machine or (3) retaining cups may be used which are mounted on the foundation and machine and which support the felt. The cups should be shallow enough to prevent any contact even with maximum loading.

Small felt discs under each leg of the machine or at each corner of a flat bed should be used rather than sheets. Also discs have proven more effective than squares. One inch thickness is suitable for general applications, although greater or less thickness may sometimes be required. The following general statements should be of practical help in many applications, although numerous vibration problems require engineering services.

The greatest isolation efficiency is accomplished by using the smallest possible area of the softest felt, in a maximum thickness, under a load which the felt will resist without excessive compression and consistent with structural stability. For general purposes, a felt thickness of from 1 to 1½ inches is most practical. Technical literature is available gives suggestions on selection of proper felt and acceptable weight loads, formulas for calculating size and type felt required for specific installations and tables that simplify selection for many average cases involving no unusual problems.

RESULTS — 80% vibration isolation efficiency is experienced under the most suitable conditions. In many cases, air borne noises are reduced and in general noise level conditions and vibration in building areas improved.

AMERICAN FELT CO., Dept. CP, Glenville, Conn.

When inquiring specify CP 345 — see handy form pages 2-3

CHEMICAL PREVIEW

When inquiring specify CP 344 . . . see information request blank, pgs. 2-3

New Solutions

Damping Oil Functions from -67° to 165° F.

Aids pressure sensing accuracy of turbo supercharger regulator

PROBLEM — In designing vibration dampening device to suppress the vibration of the pressure sensing element of a turbo supercharger regulator, static friction caused by moving parts could not be allowed to destroy sensitivity. An evacuated metal bellows was used to sense the pressures to be regulated. The unit was required to retain its sensitivity to a wide range of temperature from -67 degrees to 165 degrees F. A dash pot system could be used within the bellows if an oil could be procured that would not vaporize in a vacuum when subjected to rapid vibration and the temperature range previously specified.

SOLUTION — The device was comprised of an evacuated pressure sensing bellows as already stated. A $\frac{3}{4}$ inch diameter copper tube was placed within the bellows and when properly anchored to the stationary end of the bellows it served as a stop seat for the bellows when at rest. This copper tube was also used as a cylinder in which a small piston or coin like disc was placed on the end of a small one eighth inch rod which moved with the free bellows end. The tube end on which the free end of the bellows rested, was sealed with a small disc having a hole through which the one eighth inch piston rod moved freely. The piston or disc had a diametral clearance of approximately 8 mils and the piston rod clearance was about 30 mils. This 30 mil piston rod clearance not only served to prevent friction but also served as a port through which oil could be pumped if vibratory motion was induced. A small 70 mil. diameter hole through the wall of the tube at the upper or anchored end served as the port hole to perform the same as the rod clearance above described.

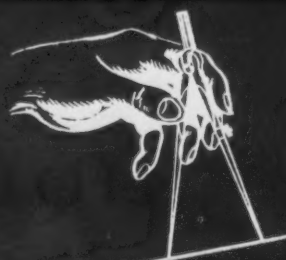
The oil selected to meet the particular requirements cited was A.G.E. silicone nonvolatile oil capable of flowing at temperatures as low as -120 degrees F and withstanding vaporization in a vacuum when subjected to over 300 degrees F. and rapid vibration.

RESULTS — Now used on all models of these turbo supercharger regulators. Life of equipment increased many times.

GENERAL ELECTRIC CO. (Chemical Dept.), Dept. CP, Pittsfield, Mass.

When inquiring specify CP 346
— see handy form pages 2-3

For more information on product at right, specify CP 347
... see information request blank between pages 2-3.



ENGINEERED

for Efficient, Low-Cost Operation

READCO

MATERIAL HANDLING EQUIPMENT

Designed to fit Your Specific Needs

No matter what capacities or sizes are needed to suit your plant layout, READCO Material Handling Equipment can be relied on to give you perfectly co-ordinated movement of powdered or granular materials.

With nearly 40 years of accumulated experience, READCO knows what it takes to keep your costs down . . . to step up your production . . . to keep your materials moving without troublesome delays. This soundly-engineered equipment assures you of top efficiency and years of dependable service:

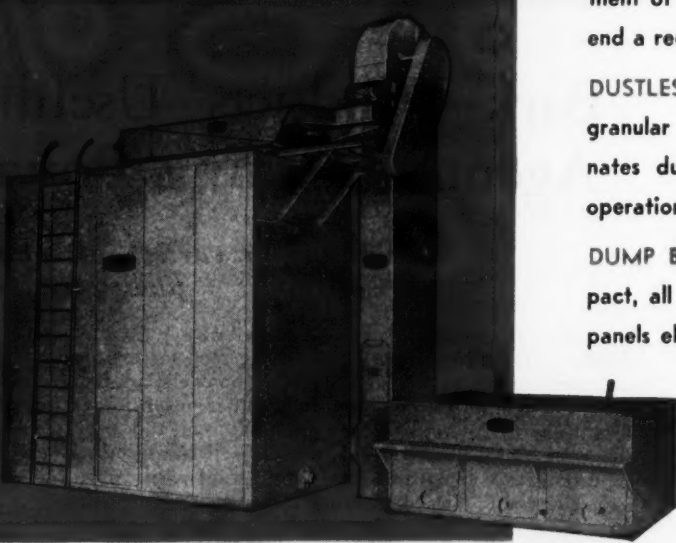
VIBRATING SIFTERS: For efficient sieving and aerating of powdered and granular materials. Removable screen extends full length of sifter. More thorough sieving is accomplished by combined movement of unit (at the charge end a rotary motion—at the discharge end a reciprocating motion).

DUSTLESS WEIGH HOPPERS: Furnished for weighing powdered or granular substances. A patented dust-controlling mechanism eliminates dust loss. Designed for either stationary or trolley-mounted operation.

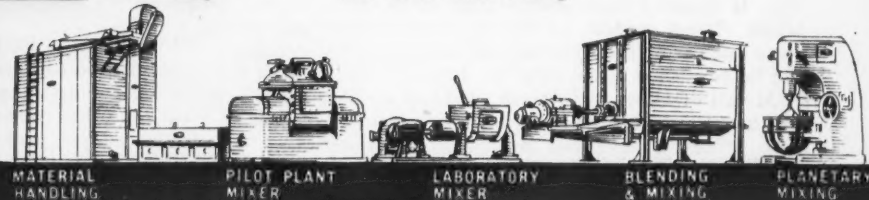
DUMP BINS, ELEVATORS, STORAGE BINS, CONVEYORS: Compact, all metal construction to meet your exact requirements. Flush panels eliminate dirt traps. Welded bases assure perfect alignment.

Screw type conveyors and screw or bucket type elevators can be furnished for capacity desired.

For detailed information on the complete READCO line of processing equipment, see your READCO representative or write for our latest catalog.



READ



MACHINERY CO., Inc.

HIGH VACUUM TECHNIQUE Produces Gas Free Metals

New Materials



High Vacuum equipment employed in producing gas free metals.

Vacuum metallurgy used in melting, degassing and casting, vaporization and distillation, heat treatment of special surfaces.

USES — The new field of vacuum metallurgy embraces a wide range of operations, which includes:

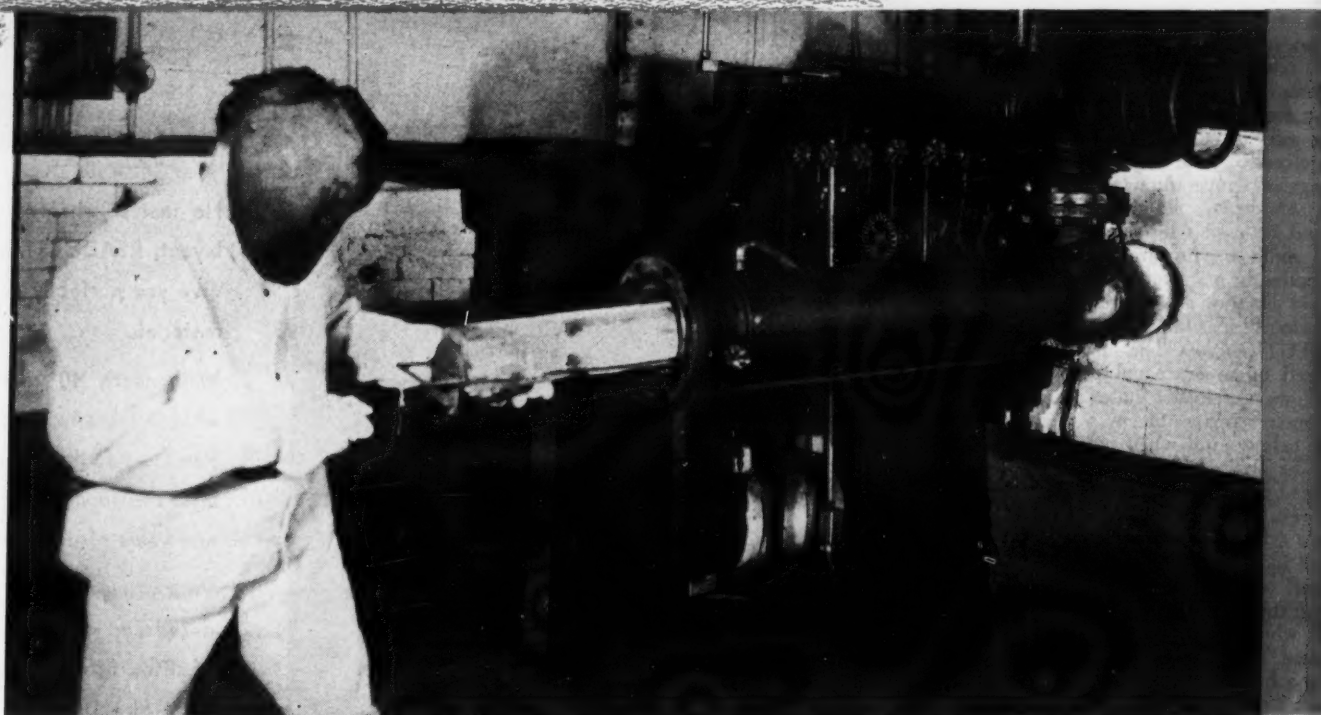
1. Melting, degassing, and casting.
2. Vaporization and distillation.
3. Heat treatment of special surfaces.

FEATURES — Multiple advantages of high purity and freedom from gaseous inclusions may now be realized by utilizing high vacuum techniques in many fields.

DESCRIPTION — Almost every non-gaseous element in the periodic table (including some non-metals) will respond to vacuum treatment. Many elements have been experimentally treated, and data indicate an extremely wide field ahead. A partial list of metals observed includes: copper, nickel, iron, and chromium, manganese, lithium, sodium, magnesium, calcium, and zinc — which are easily vaporized and produced in pure form. Company is now prepared to supply gas free metals in limited quantities for experimental work. Consultation is invited on problems where special properties of gas free metals may improve a product. Existing equipment permits melts from a few grams up to several hundred pounds capacity at pressures between 10^{-5} and 10^{-2} mm. Hg. If required considerably larger melts can be undertaken. Upon request, additional technical data and in some cases samples of the desired vacuum-treated metals can be furnished. Requests for details should include: 1. Metals of alloys of interest. 2. Uses of product. 3. Minimum sample for proper tests. 4. Shape of sample.

NATIONAL RESEARCH CORPORATION, VACUUM METALS DIVISION, Dept. CP, Boston 15, Mass.

When inquiring specify CP 348 — see handy form pages 2-3



Bark Products Useful for Conditioning Agents, Molding Powders and Extenders

Available in variety of meshes as flakes, granules, fibers and powders

USES — These bark products are being used successfully as conditioning agents in insecticide powders, ingredients for molding compounds and other plastics, and conditioning extenders for resin adhesives and other types of glues. Further uses include soil conditioning, mulching, and lawn dressing; formulation with asphalt emulsions and low to medium melting point asphalts, absorbent fillers for explosives and application in foundries.

FEATURES — Early work devoted to producing cork from bark in form and of properties suitable to augment the decreasing supply of Mediterranean cork, showed that the other constituents of bark, hard tissue and soft tissue, offered even greater promise as new industrial materials of unique and useful properties. Production facilities emphasize product control to produce the five products with standard and uniform physical and chemi-

cal properties. The very large amounts of raw material available the year round make possible sustained volume production of uniform quality products at stable prices.

DESCRIPTION — The bark itself generally consists of three constituents of greatly different physical form and characteristics; namely cork-like tissue as flakes, hard tissue in elongated form as stiff fibers and soft friable tissue. These three constituents are arranged during growth in a rather specific pattern and are cemented together to form the water resistant tough envelope protecting the cambium layer of the tree. Bark products are identified by number and are described below:

WT-383 A No. 28 mesh product comprised principally of flakes of cork which have thermoplastic properties.

WT-412 A No. 65 mesh product comprised of cork

CHEMICAL PREVIEW



WT-383 Cork flakes (15 diameters)

WT-412 Combination of bast fibers or hard tissue and cork granules (15 diameters)

WT-490 Finely pulverized soft tissue (15 diameters)

granules and hard spindle shaped bast fibers.

WT-412F A product consisting almost entirely of the spindle shaped bast fibers, 1/16" to 1/8" in length.

WT-472 A No. 65 mesh product 50% of which is No. 200 mesh consisting of a proportioned blend of cork, hard tissue and soft tissue, also thermoplastic in nature.

WT-490 A finely powdered material 95% No. 325 mesh consisting of pure pulverized soft tissue which is free flowing powder thermoplastic in nature.

Further information on bark products and samples may be obtained from the company mentioned below.

WEYERHAEUSER TIMBER COMPANY, DEVELOPMENT DEPARTMENT, Dept. CP, Longview, Wash.

When inquiring specify CP 349 — see handy form pages 2-3

FEBRUARY, 1947



How a supported catalyst can cost you less

The answer is, let Porocel Corporation put your catalyst on activated bauxite.

Our carrier—Porocel—with a price range of 2½ to 4½ cents per pound, costs much less than other supports (frequently high-priced synthetic materials). Its rugged, granular character eliminates the need for costly forming steps—permits direct impregnation by simple, inexpensive techniques. The result is savings of 20-50% in initial cost of the ready-to-use catalyst.

Porocel is inert in the great majority of cases. The degree of purity in low-iron, low-silica Porocel means almost complete freedom from unwanted side reactions. Hence, Porocel catalysts exhibit clean-cut reactions and long life. Result? Low unit operating costs.

With a surface area of about 225 square meters per gram and porosity averaging 55% of its total

volume, Porocel is capable of adsorbing large quantities of many inorganic salts or other compounds. Impregnation of the active ingredient is uniform and widely dispersed over areas easily reached by gaseous and liquid reactants—most important in surface catalysis.

Catalysts are made in mesh sizes ranging from 2/4 to 20/60 or in special grades when desired. And these tough, uniform particles withstand wide ranges of temperature, pressure and flow—stand up under severe handling.

As pioneer developers of bauxite-supported catalysts, we have produced efficient materials for others. Now, let us show you how economically it can be done for you. *Outline the details to: Attapulugus Clay Company (Exclusive Sales Agent), Dept. E, 260 South Broad Street, Philadelphia 1, Pa.*

POROCCEL

ACTIVATED BAUXITES • SUPPORTED CATALYSTS • CATALYST CARRIERS • ADSORBENTS • DESICCANTS

When inquiring specify CP 350 . . . see information request blank, pgs. 2-3

Materials

Plastic Withstands Heat Up To 220° F.

No dimensional changes or appreciable loss in strength occur at this temperature

USES—Product may be used for injection molded products requiring sterilization or contact with hot water. These products include electrical parts, surgical and medical appliances, household articles and many other industrial parts.

FEATURES—DCS molding powder is a polymer of dichlorostyrene, a modified styrene, which combines the good features of styrene together with excellent heat resistance, increased resistance to cold flow and greater dimensional stability. The greater heat resistance of DCS frequently works to the advantage of the molder allowing the removal of the piece from the mold hotter and to operate with faster cycle. This thermoplastic has low water absorption and unlimited range of color possibilities. Tests indicate that maximum service temperatures of 220° F. are possible without loss of dimensional stability. Molded parts can be boiled indefinitely and normal steam sterilization cycles do not cause softening or distortion. Mold shrinkage is normally in the range of 0.002 inches/inch permitting molding of complex shapes with critical dimensions or to pieces with intricate inserts. Small inserts are rigidly held and weld-line failures for large insert pieces are minimized.

DESCRIPTION—DCS is a thermoplastic, easily molded by standard commercial injection molding machines. Material requires slightly higher cylinder temperatures than most styrene formulations. Recommended range is 420 — 500° F., using medium to high molding pressures. Product differs from other chlorine containing plastic materials in that the two chlorine atoms are firmly bound to the benzene ring and are not released until combustion temperatures are reached. Even after ignition the combustion is not self supporting and the plastic may be termed self-extinguishing. Mechanical properties are a close parallel to those of standard styrene powders with the exception of greater hardness. Odorless and tasteless. Practically unaffected by hydrochloric acid, nitric acid, sulfuric acid, ammonium hydroxide, sodium hydroxide dilute and concentrated at room temperatures. Immersed in sulfuric acid of 1.26 specific gravity at 90° C. for 48 hours the gain in weight is less than 0.1 percent. Unaffected by the lower alcohols, aliphatic hydrocarbons, glycols and vegetable oils. Soluble

FOR YOUR INFORMATION

**NO PRICE
INCREASE**

Present Price

\$1.40

Prewar Price

\$1.45

(In 100-pound lots)

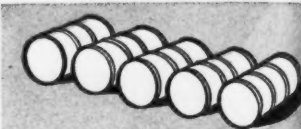
SACCHARIN

Although production costs have advanced considerably during the war period, no increase in the price of Saccharin has been scheduled. In fact, Monsanto's present pound price, in 100-pound lots, is lower than its prewar price—\$1.40 compared to \$1.45. Price of single 5-pound cans remains \$1.65 a pound, unchanged since before the war.

While capacity was materially increased during the preceding 5 years, unsettled labor conditions curtailed production during the past 6 months. However, with production now resumed, it is expected that Monsanto will be able to meet all normal requirements on a current basis in the early part of 1947. Also, it is anticipated that appreciable gains will be made on the present backlog of demand.

MONSANTO CHEMICAL COMPANY, Organic Chemicals Division, 1700 South Second Street, St. Louis 4, Missouri.

ROLL CALL!



Although the war is over, the shortage of drums isn't—due of course to a basic shortage of steel. In many cases this poses an acute packaging and shipping problem at Monsanto which can be considerably relieved by the return of empties as soon as they are available. So, if you have any empties may we ask that you send them back to Monsanto for credit. This will greatly expedite future deliveries—we may have the products you need, but not the containers in which to ship them.



New Literature on Wood Preservation with Santophen 20* (Monsanto's Pentachlorophenol, Technical)

Recently published, this 16-page booklet forms a valuable text on wood preservation with Santophen 20* in oil solutions by pressure process. It is liberally illustrated and contains numerous tables and reference data concerning the characteristics of this recognized wood preservative. Send for your copy.

Expanded Production of Synthetic Detergents

Monsanto recently announced a \$3,000,000 plant expansion program for the manufacture of synthetic detergents. Construction is already under way and it is anticipated that the new plant will be ready for operation in the latter part of 1947.

News of Monsanto Chemicals and Plastics for the Process Industries...February, 1947

DENSITY

VAPOR PRESSURE

KINEMATIC VISCOSITY

FREEZING POINTS

HEATS OF FORMATION AND FUSION

PHOSPHORIC ACID

MONSANTO CHEMICALS

Technical Bulletin No. P-26

HEATS OF DILUTION

ELECTRICAL CONDUCTIVITY

IONIZATION CONSTANTS

REFRACTIVE INDEX

RELATIVE SOURNESS

In 12 Handy Tables — All Available Physical Data on PHOSPHORIC ACID

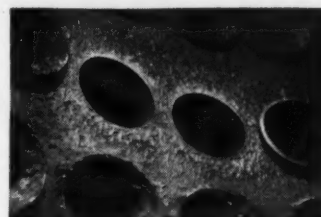
Through many years of research Monsanto's Phosphate Division has attempted to catalog and correlate all available physical and chemical data on phosphoric acid—and here the results have been distilled into twelve handy reference tables and four pages of explanatory notes.

From the tabulations in this fact-packed bulletin, graphs of the desired size and range can be prepared. Data are included on acids of a wide range of strength up to the strong phosphoric acids wherever available.

Write on your business letterhead for your copy of this helpful Technical Bulletin No. P-26 on Phosphoric Acid—a product recognized as one of the most versatile and widely useful tools of the chemical industry.

Address **MONSANTO CHEMICAL COMPANY**, Phosphate Division,
1700 South Second Street, St. Louis 4, Missouri

District Offices: New York, Chicago, Boston, Detroit, Cleveland,
Cincinnati, Charlotte, Birmingham, Los Angeles, San Francisco, Seattle.
In Canada, Monsanto Ltd., Montreal, Toronto, Vancouver.



Does this mean anything to you?

No, this isn't another picture of the moon! The "rugged terrain" you see is simply a head-on view of oxygen corrosion—foe of the boiler room, thief of power- and steam-generating efficiency. Fortunately this form of corrosion can be checked, simply by adding Santosite* (Monsanto Sodium Sulfite Anhydrous) to boiler feed water and maintaining a ratio of 30 parts to 1,000,000. All residual dissolved oxygen in feed water combines with Santosite to form sodium sulfate, the reaction product with oxygen. Result: no trace of oxygen remains—oxygen corrosion can't start!



Goodbye, Mr. Rat!

After hundreds of years as a world scourge, the rat is nearing the end of his trail of terror and filth. With the coming of Compound 1080, his doom is nearer at hand, as well as that of his army of 1,300 rodent relatives—house mice, field mice, squirrels, gophers and woodchucks, just to mention a few. Outside experiments are also being conducted to test the effectiveness of Compound 1080 in exterminating wolves, foxes, coyotes and other predatory animals. (Because of its high toxicity, Compound 1080 is sold only to licensed operators and to Government Experimental Stations.)



MONSANTO CHEMICAL COMPANY, 1700 South Second St., St. Louis 4, Missouri...District Offices: New York, Chicago, Boston, Detroit, Cleveland, Cincinnati, Charlotte, Birmingham, Los Angeles, San Francisco, Seattle. In Canada, Monsanto Ltd., Montreal, Toronto, Vancouver. *Reg. U.S. Pat. Off.

Materials

in aromatic hydrocarbons, chlorinated hydrocarbons, some esters, some ethers and some ketones. Electrical properties closely resemble styrene. Dielectric constant and power factor are practically constant over a wide range of frequencies from 1×10^2 to 3×10^9 cycles; the values are 2.64 for dielectric constant and 0.0005 for power factor. Material is transparent and colorless and may be colored to any desired shade by the addition of dyes and pigments. Available at present only in the natural clear powder. Production is on a limited scale but is available for either development or small production runs. Complete information on request.

MATHIESON ALKALI WORKS, Inc.,
Dept. CP, 60 E. 42nd St., New York 17 N. Y.

When inquiring specify CP 351
—see handy form pages 2-3

★

Molding Powder Dyes Mix 1/2 Oz. To 26 Lbs.

*8 intermixable colors blend with
plexiglas, polystyrene, etc.*

USES—For coloring either clear or opaque injection molding powders. Can be used with cellulose acetate, polystyrene, lucite, plexiglas and vinyl molding powders.

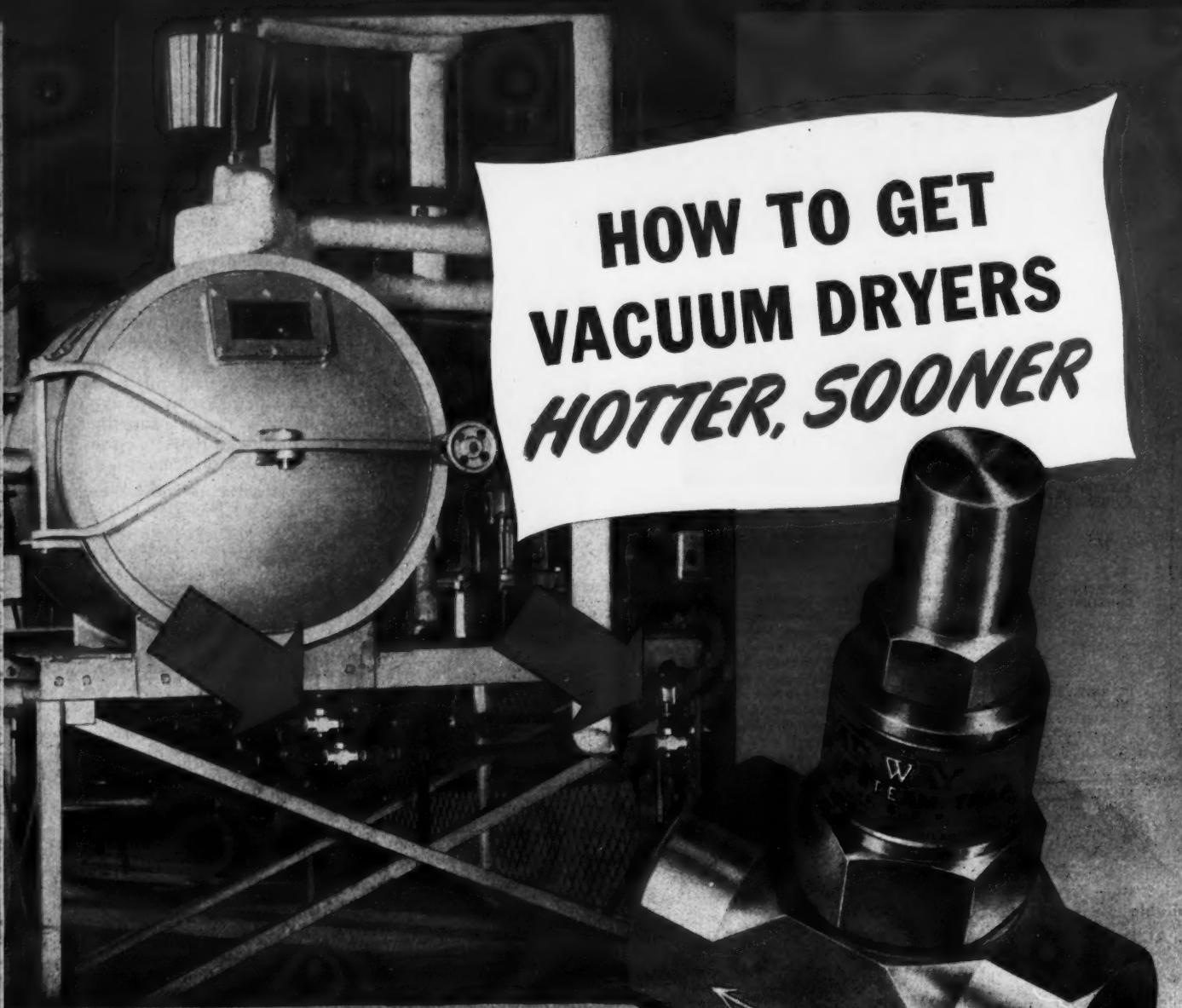
FEATURES—These new dyes are fast, contain quality materials, and all colors are intermixable, thus offering many shades as the need arises. Light shades are produced by adding as little as 1/2 oz. to 26 lbs. of molding powder. Medium shades obtained by adding as little as 1 oz. to 26 lbs. of powder.

DESCRIPTION—Poly Supra Concentrate Molding Powder Dyes. Required amount of dye is first sprinkled into molding powder, then both are well tumbled. When this procedure is complete, molding powder is used in the regular manner. When clear molding powders are used, finished injection molded part is clear, transparent color. When opaque powder is used, finished part will be opaque. Available in red, royal blue, blue-green, orange, amber, purple, black and yellow. Write for additional information.

KRIEGER COLOR AND CHEMICAL COMPANY, Dept. CP, 6531 Santa Monica Blvd., Hollywood 38, Calif.

When inquiring specify CP 352
—see handy form pages 2-3

For more information on product at left, specify CP 353
...use information request blank between pages 2-3.



HOW TO GET VACUUM DRYERS HOTTER, SOONER

YARWAY IMPULSE TRAPS DRAIN STEAM-HEATED VACUUM DRYER IN CHEMICAL LABORATORY

Industrial applications of high vacuum processing are constantly increasing... and so are installations of Yarway Impulse Steam Traps.

Here at the Eastern Regional Research Laboratory of the Department of Agriculture, three Yarways are shown on a steam-heated vacuum drum dryer in the Chemical Engineering and Development Division.

These and nearly 200 other Yarways used on various equipment in the laboratory, are doing a good job... and so they should. Yarways are famous for getting equipment hotter, sooner, and keeping it hot. Continuous discharge under heavy

loads brings equipment to working temperature sooner; discharge at short intervals under lighter condensate loads keeps it hot.

Other Yarway features—one moving part, easy maintenance, small size, easy to install, suitable for all pressures, low price.

Try a Yarway today... standardize on Yarways tomorrow. See your local Mill Supply Dealer or write for Yarway Bulletin T-1739.

YARNALL-WARING COMPANY
125 Mermald Ave., Philadelphia 18, Pa.

OVER 500,000 ALREADY PURCHASED!

YARWAY IMPULSE STEAM TRAP

Materials

Liquid Strip Coating Protects Bottles, Glassware, Tools

May be sprayed or dipped; formulated in transparent or opaque colors

USES — As a temporary strip-off protective coating on bottles, glassware, tools, utensils, china, etc.

FEATURES — High moisture resistance; selection of a wide variety of colors; easily removed; spray or dip application. Special formulations which are hard and mar resistant (characteristics not found in vinyl resins).

DESCRIPTION — This coating which is named "Liquid Strip" combines high moisture resistance, as characterized by a vinyl film, with high gloss. It is formulated in transparent or opaque colors and is available in two types, flexible and tough, hard. For many purposes the flexible coating is sufficient where expense does not warrant a two coat job. It may be applied by spray or dip. A dip coat will set in 15 to 20 minutes to a tack free soft film which upon air drying for 25 hours loses the remainder of solvent and becomes stripable. (Overnight drying is often sufficient.) A fan may be used to aid solvent evaporation. Two thinners, for slow or fast evaporating are available and their manner of use is determined by existing conditions. The tough, hard strip coating is used as a top coat over the flexible coat where this heavier type of covering is required. The hard strip coating is furnished in the form of a gel and is heated at 50 degrees C. until liquid.

Additional information on request. Unless otherwise specified samples sent will be in transparent red.

AMERICAN RESINOUS CHEMICALS CORP., Dept. CP, Peabody, Mass.

When inquiring specify CP 354
— see handy form pages 2-3

★

Catalog is Safety Manual

A 106-page catalog and safety manual covers eye protection; welders' safety; gas, dust and fume protection; hats, belts and clothing; lamps and lanterns; miscellaneous safety equipment and first aid. Write.

E. D. BULLARD COMPANY, Dept. CP, 275 Eighth St., San Francisco 3, Calif.

When inquiring specify CP 355
— see handy form pages 2-3

For more information on product at left, specify CP 356
... see information request blank between pages 2-3.

Radio Frequency Curing Of Wood Assemblies Is Faster

Drops curing time from hours to minutes when used with certain formaldehyde resins



Resin adhesives with radio frequency

USES—Radio frequency heat is capable of heating, and thus curing, sizeable plywood or wood assemblies more thoroughly and rapidly than any other method of heating. This method has been tested and is now in use by a number of manufacturers of such equipment.

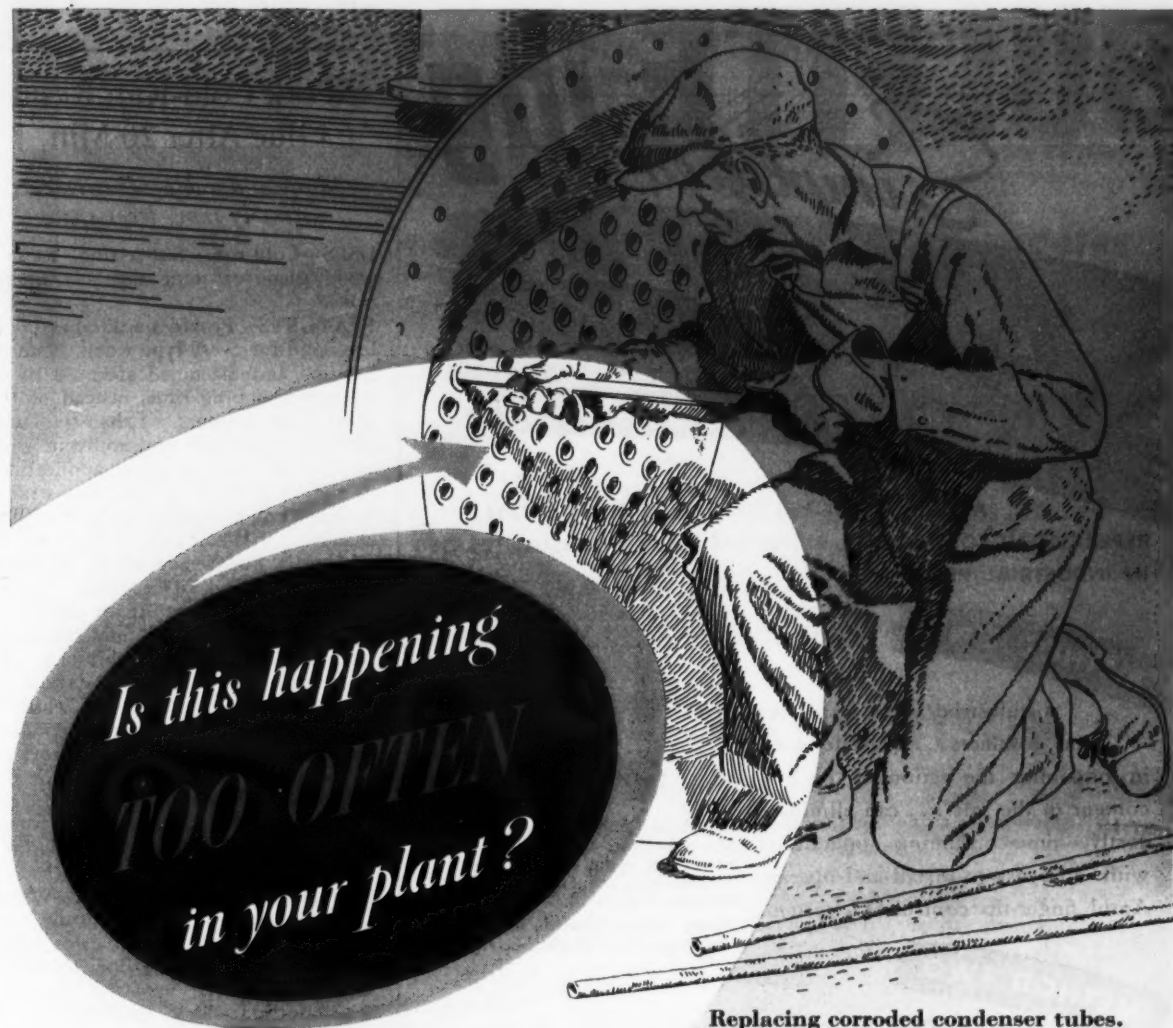
FEATURES — Reduces curing time for large plywood assemblies from

hours to minutes, while assuring even cure throughout. Relatively low current, through proper equipment, produces adequate heat to cure resin adhesives without damaging the wood. At glue line temperature of 100° F., Amberlite PR-115 a resorcinol-formaldehyde resin, and Uformite CB-552, a urea-formaldehyde resin adhesive, will attain cure in about 90 minutes; at 125° F., 15 and 25 minutes respectively; at 150° F., 3 and 8 minutes, and at 175° F., 1 and 3 minutes. The flexible time-temperature range of both these resins makes them well adapted to radio frequency heat technique. Both produce highly water-resistant joints. Bonds made with Uformite CB-552 are adequate for products used indoors and in protected locations. Those made with Amberlite PR-115 are more durable than the wood itself, and are adequate for weather exposure and severe service required for boats and marine structures.

DESCRIPTION—Radio frequency changes one form of energy into another; hence, electrical current is converted to heat by molecular friction. Wood is an extremely poor conductor, requires very high voltage to transmit electrical current. If current is reversed many million times a second, molecular friction results, producing heat. This heat is not local, but is dispersed throughout the wood and is different in effect than heat applied only on outside. It is similar to physicians diathermy technique which exerts curative effect of internal heat without burning skin. Molecular friction varies with wood density and moisture content, neither of which are entirely uniform. Hence, heat of wood will vary more or less. While seldom significant, this should not be overlooked. It is desirable to keep heat of wood below boiling point of water to avoid internal steam pressure, and temperature should be kept no higher than 180° F. It is important to regulate temperature and time to secure initial grip in glue joint before heat and pressure are released, since further adequate cure will come from heat stored in wood or even at normal room temperatures. To obtain additional information, write.

THE RESINOUS PRODUCTS & CHEMICAL COMPANY,
Dept. CP, Philadelphia, Pa.

When inquiring specify CP 357 — see handy form pages 2-3



Replacing corroded condenser tubes.

**Condenser Tubes of
Alcoa Alclad Aluminum may be the
answer to your corrosion problems**

The idea's not new. Condenser tubes of Alcoa Aluminum are already employed in all manner of processing plants. The aluminum safeguards product quality. And it offers high resistance to the attack of corrosive cooling waters and of materials being processed.

Now, a new development in tubing is offered —Alcoa Alclad—strong aluminum combined with a highly protective interior coating of

aluminum. An even greater number of gases and liquids can be handled by aluminum condenser tubes than before.

Why not try aluminum tubes in one of your condensers? In addition to being long-lived, tubes of Alcoa Alclad are surprisingly low in first cost. See our nearest sales office or write ALUMINUM COMPANY OF AMERICA, 1731 Gulf Building, Pittsburgh 19, Penna.

ALCOA FIRST IN ALUMINUM



When inquiring specify CP 358 . . . see information request blank, pgs. 2-3

SULFITE-ing

Simplified

with

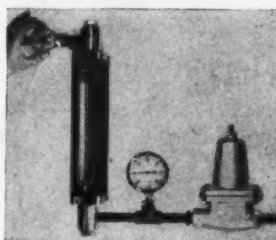
ANSUL

SULFUR DIOXIDE

ANSUL SULFITE-ing METHOD IS THE ACCEPTED REPLACEMENT FOR SULFITES, BISULFITES AND METABISULFITES IN INDUSTRIAL PRACTICES.

METHOD ONE

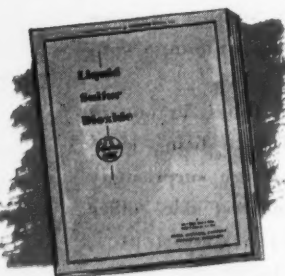
• Industrial users of sulfites and bisulfites... interested only in obtaining the action of the SO_2 content of the salt... can eliminate costly, time-consuming operations with an easy-to-install-and-operate Ansul finger-tip control SO_2 system.



An Ansul finger-tip control SO_2 system is easy and economical to install and operate. It provides a regulated supply of pure SO_2 . Ansul Sulfur Dioxide is inexpensive and readily available.

METHOD TWO

• When it is essential to use a sulfite, bisulfite or metabisulfite, it may be more economical and more efficient to make it on the job by mixing specified amounts of alkali or other basic compounds with water solutions of Sulfur Dioxide.



Ansul technicians will willingly co-operate with you in setting up an Ansul Sulfite-ing system in your plant. Write for additional information and ask for your copy of the booklet "Liquid Sulfur Dioxide."



PHYSICAL PROPERTIES

Chemical formula.....	SO_2
Molecular weight.....	64.06
Color (gas and liquid).....	Colorless
Odor.....	Characteristic, pungent
Melting point.....	-103.9° F. (-75.5° C.)
Boiling point.....	-14.0° F. (-10.0° C.)
Density of liquid at 80° F.....	(85.03 lbs. per cu. ft.)
Specific gravity at 80° F.....	1.363
Density of gas at 0° C. and 760 mm.....	2.9267 grams per liter (0.1827 lb. per cu. ft.)
Critical temperature.....	314.82° F. (157.12° C.)
Critical pressure.....	1141.5 lbs. per sq. in. abs.
Solubility.....	Soluble in water
Parity.....	99.9+% (by wt.) SO_2 (H ₂ O less than 0.01%)

*REG. U. S. PAT. OFF.

For your METHYL CHLORIDE applications... Use ANSUL METHYL CHLORIDE

ANSUL CHEMICAL COMPANY
INDUSTRIAL CHEMICALS DIVISION, MARINETTE, WIS.
Eastern Office: 60 E. 42nd St., New York City

When inquiring specify CP 359 — see handy form pages 2-3

Materials

Work Cold-Run Resin Glue After 20 Min.

Odorless, durable adhesive cuts assembly time, frees space

USES—Cold-run, fast-setting resin wood glue for joint assembly operations.

FEATURES—Provides a durable, odorless bond for every type wood. Can be handled and machined after 20 to 30 minutes clamping time, instead of the usual 6 to 8 hours. Exhaustive tests and two years' use and study in wide variety of wood-working applications in the field show it produces strong, resilient bond, unaffected by humidity changes. It is cold-run, hence bonding quality is not weakened by constant heating. Liquid, it is ready for use without soaking, heating or additions. Does not harden in pot, and characteristics are unaffected by shipment, application or use. Storage and working life is months. It eliminates "chilled" joints; no need to heat glue or wood, or heat room above comfortable working temperature. Will not embrittle nor form hard abrasive film to dull saws and knives. Its fast setting speed shortens assembly lines, frees working space.

DESCRIPTION—Trade name: Wood-Lok. In colors from uniformly controlled pure white, which dries colorless and leaves no glue line, to darker shades for special uses. A war-time development. Now available to all wood-working industries. For additional information, write.

NATIONAL ADHESIVES, Dept. CP, 270 Madison Ave., New York 16, N. Y.

When inquiring specify CP 360 — see handy form pages 2-3

★

Cuts Zeolite Regeneration Cost

A four-page, illustrated pamphlet is entitled, "Why the Lixate Rock Salt Dissolver Slashes Costs of Regenerating Zeolite Water Softeners." Explaining that the Lixator is made in a wide range of sizes to meet any brine volume requirement, the pamphlet points out that the unit is completely automatic, eliminates salt handling, uses free-flowing Sterling rock salt, makes filtered crystal-clear brine, makes fully saturated brine and uses present equipment. Paragraphs are devoted to each of these features. Chart shows a Lixator arrangement with existing zeolite water softening system. Write for this literature.

INTERNATIONAL SALT COMPANY, Inc., Dept. CP, Scranton, Pa.

When inquiring specify CP 361 — see handy form pages 2-3

B. F. Goodrich Chemical Company

has for sale these GOOD-RITE brand chemicals

★

In Commercial Quantities

Phenyl B Naphthyl Amine • Distilled • Commercial

Mixed Mono-and Diheptyl Diphenyl Amines

Isopropoxy Diphenyl Amine

p Hydroxy Diphenyl Amine

N-Nitroso Diphenyl Amine

Diphenyl p Phenylene Diamine

Di B Naphthyl p Phenylene Diamine

Monobenzyl Ether of Hydroquinone

Di Isopropyl Dixanthogen

Mixed Ethyl and Dimethyl Mercaptothiazoles

Mixed Aliphatic Thiazyl Disulfides

★

In Pilot Plant Quantities

Dibenzyl Ether of Hydroquinone

★

For additional information please write

B. F. Goodrich Chemical Company A DIVISION OF THE B. F. GOODRICH COMPANY
Department CG-2, Rose Building, Cleveland 15, Ohio

When inquiring specify CP 362 — see handy form pages 2-3

NUKEM Acid-Proof FLOORS
stand up under the
KIND OF SERVICE

Toughest

ACIDS

SHOCK

CLEANING ALKALIES

WEAR

Regardless of the particular conditions in your plant, one of the several types of NUKEM Acid-proof floor construction will solve your problem. For NUKEM floors are immune to all commercial acids, alkalies and solvents; are leak-proof and wear-proof; yet they are attractive and easy to keep clean. The first cost of a NUKEM floor is the last cost.

Wherever a corrosive condition exists, a NUKEM floor will end floor trouble. Chemical Plants, Laboratories, Steel Mills, Galvanizing Plants, Food Processing Plants, Dairies, Ice Cream Plants and similar industries appreciate NUKEM floors most.

Write or wire for the NUKEM representative nearest you. You'll find him helpful. Also ask for booklet describing NUKEM acid-proof construction.

NUKEM Products CORPORATION
124 COLGATE AVENUE, BUFFALO 20, N. Y.

When inquiring specify CP 363 — see handy form pages 2-3

CHEMICAL PREVIEW

Materials

Uses for Metallic Soaps are Innumerable and Varied

Water repellants, skid-proof compounds and paint flatting agents are typical

USES — Some metallic soaps are used as lubricants, others as frictioning agents; some disperse in organic liquids with gel formation, others are used effectively to destroy such gels. They are also used to enhance the adhesion of lubricating oils to metal surfaces; to free rubber and plastic forms for metal molds; as demulsifiers and as emulsifying agents, among the latter group being some which form water-in-oil and oil-in-water emulsions. Generally inflammable, a few are used as flame retardants. One acts as a water-proofing agent, but may be applied as a water solution. Metallic soap gels can modify wax and asphalt compositions for coating or laminating paper products. A small quantity of a gelling soap dispersed in cordage oils improves both appearance and water-resistance of rope. Calcium and magnesium soaps, combining lubricating action with high bulk and fluffiness, are useful where lubricated surfaces come in contact with foods and medicinals. A lubricant for the human skin, zinc stearate is frequently added to cosmetic powders, improving their "feel." Zinc or magnesium stearate are used to lubricate wire-drawing dies, both reducing wear and permitting increased drawing speed. As a paint, spray, suspension or dispersion, metallic soaps are used to promote water repellancy of structural materials such as brick, stone, mortar, cement, concrete, asbestos shingles and pressed wood. Similar results are obtained with wood surfaces, textiles, paperstock, cardboard and boxboard. Aluminum stearate is used to raise water resistance of cigarette papers, and is a patented frictioning agent against rug slippage. Together with zinc stearate it is the most commonly used of metallic soaps for flattening purposes in connection with paints, varnishes and lacquers. Smoothness and adhesion of cosmetic powders is improved by addition of calcium, zinc and other bulky soaps. Sodium and potassium stearates and palmitates are major ingredients of shaving and hand creams.

FEATURES — Metallic soaps possess varied and surprising properties, as may be seen from the foregoing data. Water-insoluble metallic soaps are decidedly water-repellant and when dried usually resist wetting with water. This action may be observed by rubbing zinc stearate U.S.P. XII into surface of blotting paper. Droplets of water will not be drawn into surface of treated paper for a considerable time.

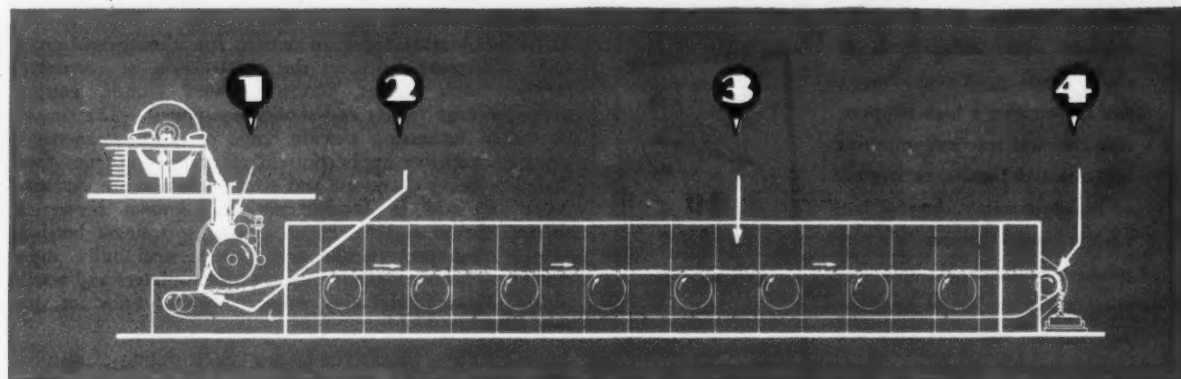
DESCRIPTION — Pure metallic soaps of some of the more alkaline metals such as calcium, magnesium, lithium or lead may be prepared by an analogous reaction of their oxides, hydroxides or carbonates with fatty acids. Thus prepared, they exhibit a rather coarse, dense structure. Lighter and fluffier soaps can be precipitated by mixing water solution of a salt of the metal and the sodium salt of the fatty acid. This is a general method of preparation, as most metallic soaps are almost completely insoluble in water. Other commercial preparations involve replacement of part or all of the water used in precipitation procedure with ethyl or butyl alcohol. Write for 26-page booklet "Metallic Soaps."

MALLINCKRODT CHEMICAL WORKS, Dept. CP, 72 Gold St., New York 8, N. Y.

When inquiring specify CP 364 — see handy form pages 2-3

FEBRUARY, 1947

Magnesium carbonate dried from moisture content of 565%* (B.D.W.B.) to 1.0% in 29 minutes



This means 5.65 lbs. of water per 1.0 lb. dry material

in PROCTOR CONTINUOUS CONVEYOR SYSTEM

In one typical installation of a Proctor individually designed continuous conveyor system, for use in drying magnesium carbonate, here is what takes place:

① Material with moisture content of 565% (B.D.W.B.*) is delivered to pre-forming feed of dryer, from a continuous filter. ② Coming to the hopper of the fin drum feed in this highly moist state, the material is pressed into the grooved surface of an internally heated, revolving fin drum. On this drum, the material is dried sufficiently to be discharged to the conveyor of the continuous dryer, in the form of small sticks of uniform thickness.

③ Loaded to uniform depth on the moving conveyor, the material is conveyed through the drying chambers where heated air at 290°F. is circulated through the bed of magnesium carbonate. By forming the

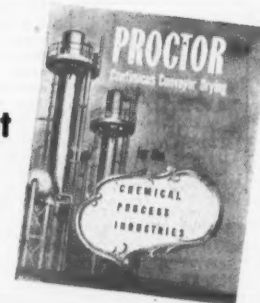
material into small, uniform shapes, more rapid diffusion is possible, which accounts for rapid drying and uniformity. ④ After only 29 minutes of drying time, magnesium carbonate, uniformly dried to a moisture content of 1.0% (B.D.W.B.), is discharged from the dryer at the rate of 500 pounds (C.D.W.†) per hour

This particular application for one type of Proctor pre-forming feed, combined with a continuous conveyor dryer, illustrates just one installation. These systems are literally tailor-made to meet individual plant and product requirements... after careful research and study into the specific problem. If the drying of wet-solids is part of your operation, it will pay you to have Proctor engineers consider your problem. Write today.

†Commercial dry weight.

This is a case history taken from this new Proctor booklet

A new 12-page booklet on "Proctor Continuous Drying for the Chemical Process Industries" is available upon request. It contains many case studies showing the application for Proctor individually designed systems. Write for your copy of this informative booklet today.



PROCTOR & SCHWARTZ, INC. Philadelphia 20, Pa.

When inquiring specify CP 365 . . . see information request blank, pgs. 2-3

Research Pays Off

ANNEALING silica ware is only one step in Amersil's research program designed to produce silica and quartz ware that lasts longer on the job.

Amersil translucent and transparent silica ware laboratory equipment will not contaminate either neutral salt or alkali solutions. Thus whether you are running a high temperature chemical reaction, collecting hot corrosive liquids, or refining or sintering metals, Amersil laboratory ware assures a pure product. Non-porosity, high electrical resistivity at all temperature and the ability to withstand severe thermal shocks are additional characteristics which make for successful test completions.

LASTS
a
minimum
of
10
TIMES
LONGER

Unsolicited advice from a consistent user of AMERSIL ANNEALED SILICA TRAYS states they last a minimum of ten times longer than trays which have not been annealed.
*None on request.

AMERSIL COMPANY Inc.
CHESTNUT AVENUE ENGELHARD HILLSIDE 5, N. J.

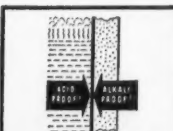
When inquiring specify CP 366 — see handy form pages 2-3

Corrosion Proofing

IN SOME OF AMERICA'S LARGEST PLANTS

- * "Prufcoat on floors and pump supports in sulfuric acid concentration plant—no failure after more than three years."
- * "Entire concrete building coated with Prufcoat—no trace of failure due to blistering, peeling or chipping in over five years."
- * "Prufcoat on concrete piers and steel beams subjected to muriatic acid fumes—no deterioration in over six years."

* Actual Prufcoat reports. Names of these plants upon request.



The Prufcoat film formed after polymerization has virtually a zero acid number, saponification number and water absorption rate.

PRUFCOAT PROTECTIVE COATINGS are applied by brush by your own maintenance crew and air-dry in a matter of minutes. One material protects all surfaces—concrete, structural steel, floors, pipes, tanks and machinery. No Prime Coat is needed. Two or three coats of Prufcoat provide Positive Protection against acids, alkalis, alcohol, oil, water and weather—at a cost per gallon only slightly more than ordinary paint. No matter what your corrosion-proofing problem may be, Prufcoat can save you maintenance dollars. Write today for descriptive bulletin. Prufcoat Laboratories Incorporated, 63 Main St., Cambridge, Mass.



One material for application to All surfaces

When inquiring specify CP 367 — see handy form pages 2-3

Materials

Acid-alkali Proof Resin Cement Has Less Than Three-fourths -Percent Absorption

Adheres at 500 psi; tensile and compressive strengths are 1,000 and 10,000 psi

USES — A synthetic resin cement for joining acid-proof and alkali-proof brick in the construction of corrosion-resistant tank linings, flooring, sewers, sumps, gutters, drains, storage vessels and similar equipment. The characteristic of possessing a wide range of chemical inertness gives it extensive application in all industries from food plants to heavy chemicals and steel manufacture. Satisfied users are said to include nationally-known breweries, dairies, cheese and ice cream plants, soft drink bottling plants, meat packers, chemical houses, steel mills, sugar refineries, bakeries, candy manufacturers, platers and textile mills. Manufacturer also makes acid-proof brick for similar purposes.

FEATURES — Unaffected by any concentration of alkalis. Also proof against most inorganic acids, with the exception of those which are highly oxidizing. Is inert to most inorganic materials except for certain solvents and certain oxidizing acids. This material sets by means of chemical action to form a hard, durable, non-porous joint having an absorption of less than three-fourths of 1%, and bonds to brick with an adhesive strength of more than 500 pounds per square inch, a tensile strength of 1,000 pounds per square inch, and a compressive strength of 10,000 pounds per square inch.

DESCRIPTION — Trade names: Alkor synthetic resin cement joints and Atlas acid-proof brick. Floors, tank linings, drains, sumps and similar equipment constructed with the use of these materials are said to be ready for service in anywhere from two to four days after the last brick is laid. The setting may be accelerated by painting the joints with acid and then applying heat.

THE ATLAS MINERAL PRODUCTS COMPANY OF PENNSYLVANIA, Dept. CP, Mertzton, Pa.

When inquiring specify CP 368 — see handy form pages 2-3

Iron Asphalt Flooring Has Hard, Resilient Qualities

Is fire resistant, non-dusting, and sealing

USES — Provides a dry, warm surface for flooring.

FEATURES — It is sufficiently resilient to absorb shocks of heavily loaded steel wheel trucks, yet hard enough not to allow the same loads to sink in when left standing for long periods. Hard enough to bear the weight of stored raw materials, this flooring will not powder or crack. It is non-dusting, flexible, self sealing and is fire resistant. The coating can be feather edged and easily patched. Flooring with this material can be continued as a cove at walls or around machinery, providing a continuous surface and eliminating dirt pockets.

DESCRIPTION — This coating is monolithic, vermin-proof, odorless, and easy to keep clean. It may be flushed without damage. Full information on this and other products of a similar nature will be furnished on request.

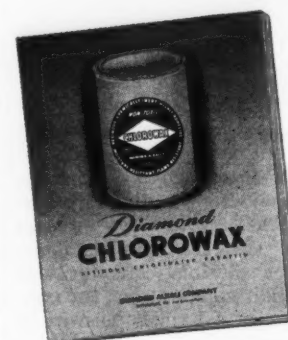
TUFFALT, INC., Dept. CP, Pittsburgh 3, Pa.

When inquiring specify CP 369 — see handy form pages 2-3

Get this Informative New Bulletin on

CHLOROWAX

RESINOUS CHLORINATED PARAFFIN



- ← for Interior and Exterior Paints
- ← for Wood Impregnation
- ← for Textile Coatings
- ← for Paper Coatings
- ← for Varnishes and Lacquers
- ← for Glues and Adhesives
- ← for Printing Inks
- ← for Many Other Uses

This revised bulletin contains new tables, charts and other data pertinent to the use of Chlorowax in your formula. Write for your copy today.

DIAMOND ALKALI CO. 
PITTSBURGH 22, PA., AND EVERYWHERE

When inquiring specify CP 370 — see handy form pages 2-3

Norton Refractories LIKE Heat!

We say that Norton Refractories "like heat" because that's what they're made for . . . high temperatures . . . industrial operations where they must either contain heat or else transfer it efficiently. In fact, the higher the temperature involved, the more reason to specify Norton Refractories. The basic ingredients of these heavy duty refractories are electrically fused alumina, silicon carbide or fused magnesia plus a highly refractory bond . . . the mixture depending upon the job for which the refractory is intended. For special high temperature research Norton Company has developed a line of "Pure Oxide Refractories" which are made without bond and can be used at higher temperatures than bonded shapes.



NORTON COMPANY
Worcester 6, Massachusetts

When inquiring specify CP 371 — see handy form pages 2-3

CLIFTON PRODUCTS

INCORPORATED



Manufacturers of

BERYLLIUM COMPOUNDS

•
BERYLLIUM OXIDE,
Refractory Grade, Fused
BERYLLIUM OXIDE, Metal Grade
BERYLLIUM OXIDE, Fluorescent
BERYLLIUM SULPHATE
BERYLLIUM STEARATE
MINOR BERYLLIUM CHEMICAL SALTS

•
Works and Office
PAINESVILLE, OHIO

When inquiring specify CP 372 — see handy form pages 2-3

Materials

Chemically Resistant Enamels

Formulated with modified synthetic rubber base

USES—For use on steel and most other metals, wood cabinets, furniture, air conditioning equipment and other products requiring a chemically resistant air-drying, baking finish.

FEATURES—Tough, flexible and resists outdoor exposure.

DESCRIPTION—Available in most colors. These enamels, known as Coprene are also made with metallic powders to produce metal-like coatings (Coprene Metalsture Enamels) and finishes resembling beaten metal (Hamertone).

MAAS & WALDSTEIN CO., Dept. CP,
 438 Riverside Ave., Newark 4, N. J.

When inquiring specify CP 374
 — see handy form pages 2-3

★

Lists Properties, Precautions for Handling Fluorine

Exposure to fluorine in the atmosphere is "at least" as hazardous as chlorine, and precautionary measures are not fully developed. For purchasers and potential users of this rare and highly reactive element, however, a 12-page preliminary manual is available. This covers known properties and precautions for handling. Manufacturer explains that general commercial shipments of fluorine are such a recent development that this literature is passed along to potential users to bring their data up to date before beginning research with the gas. In addition to research laboratories selected for first deliveries, manual will be distributed to small list of industrial firms and universities, also a few technical libraries. It contains instructions for handling half pound cylinders of fluorine, includes known data on first aid, chemical and physical properties of the element, an outline of literature on organic fluorine compounds and an introduction to chemical literature of inorganic fluorine compounds. Instructions for handling cover storage, withdrawing fluorine gas, piping and fixtures, general precautions, handling leaks during use, first aid treatment. Since it is believed its action on the human body is similar to, but more intense than anhydrous hydrofluoric acid, the recommended first aid treatment for the acid is given. Manual F-1.

PENNSYLVANIA SALT MANUFACTURING COMPANY, Dept. CP, 1000 Widener Bldg., Philadelphia, Pa.

When inquiring specify CP 375
 — see handy form pages 2-3

Do You Know That You Can—

Protect...

**FLOORS
 WALLS
 EQUIPMENT**

Against...

**ACIDS
 ALKALIS
 CAUSTICS**

with

Acid-Causticbond

Acid-Causticbond is a fast-drying, brush-applied air-dry plasticized resin coating. Recommended for general application wherever Caustics, Brine, Acids, or Fumes cause corrosion or deterioration of Masonry, Metal, Concrete, or wood. Dries enough for recoating in 2 to 4 hours — completely dry in 24 hours. Use on either exposed or submerged surfaces. Available in Clear, Black, and four colors.

Acetic Acid
 Hydrofluoric Acid
 Lactic Acid
 Muriatic Acid
 Nitric Acid
 Oleic Acid
 Phosphoric Acid
 Sulphuric Acid

Bleach Solutions
 Chlorine
 Cyanides
 Formaldehyde
 Salt Solutions
 Sodium Hydroxide
 Sodium Hypochlorite
 Sulphur Dioxide

Caustic Soda
 Calcium Chloride
 Tri-Sodium Phosphate
 Escaped Flue Gases
 Pickling Solutions
 Fruit and Vegetable Juices
 Lubricating Oils
 Refrigerants



A Portfolio of Chemical Resistant Coatings with data on Protectioneered Products will be sent on request.

**The
 WILBUR & WILLIAMS
 COMPANY**

OTHER W. & W. PROTECTIVE COATINGS FOR INDUSTRY

RUBBER-COAT No. 88. Rubber resin coatings offer certain advantages of adhesion and hardness with excellent resistance to caustics and many acids.

BRINE-PROOF. For use in brine ice cans — salt water tanks — ship hulls, refrigeration equipment, etc. withstands immersion in brine.

No. 71 CONCRETE TANK LINER. Protects tanks and tank cars from High-Oxide Gas and Sour Oil.

Dept. C-22, Greenleaf & Leon Streets, Boston 15, Mass.

**HAERING
 ORGANIC
 GLUCOSATES**
 Control
**SCALE,
 CORROSION
 AND ALGAE**
 in
**INDUSTRIAL
 PLANTS**

WRITE ON YOUR
 LETTERHEAD FOR
 SPECIAL LITERATURE

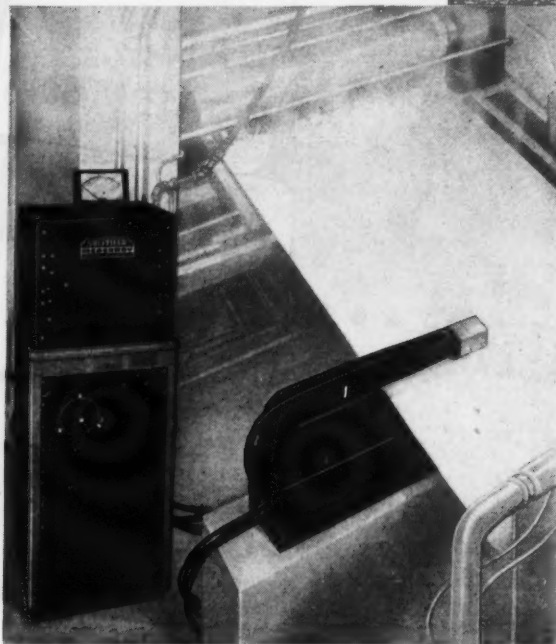
WE READ WATER

D. W. HAERING & CO., Inc.
 GENERAL OFFICES
 205 West Wacker Drive, Chicago 6, Illinois

When inquiring specify CP 373 — see handy form pages 2-3

When inquiring specify CP 376 — see handy form pages 2-3

Instruments



Instrument provides a non-contact method for either continuous or spot checking thickness of moving material.

Non-Contact Instrument Measures Thickness of Moving Materials

Accuracy 1% — not affected by temperature changes or speed of material movement

USES — A new X-ray and electronic application is employed in this gauging instrument for non-contact, continuous or spot checking of thickness of all plastics, composition material, film, rubber, cellophane types of moving materials. It is suitable for use with brass, copper, steel, aluminum or any other metal; paper, plastics, composition material, film, rubber, cellophane in the form of sheets, or foil of any kind. Metal foil can be checked for thickness to an accuracy of one per cent as well as sheet materials 3/16" thick. Concentricity can likewise be checked to measure a wire surrounded by insulation.

FEATURES — Precise accuracy is maintained regardless of any changes that may occur in the product. Speed of movement of material, whether at the rate of 5 feet or 5,000 feet per minute, has no effect on the accuracy of the Measuray. Neither does the temperature of the room, nor of the stock. For example, sheets or strips coming hot from the rolls give the same indication when cooled to room temperature. Day after day uniform readings are obtained because of the in-built stability of the system employed. No contact is required with the

material to be gauged, and in some cases the nearest approach of any mechanical part of the instrument can be many inches away. This eliminates expensive destructive inspection. Wall thickness of steel tubing can be checked at any point without cutting the tubing. Material being checked can move or whip up and down within practical limits in between the X-ray source and the detector without disturbing the accuracy of instrument.

DESCRIPTION — The instrument utilizes masters of the same material to be checked for set-up and operation purposes and operates as a comparator. It compares the thickness of material with a sample of the same material which has the required known dimension. The variations of thickness are indicated in percentages. Standard units are equipped with indicating mechanisms, while recording and machine control devices are available. Gauge head is placed at a convenient location at any desired distance and can be located so that moving stock passes between the X-ray source and the detector. Electronic power supply and amplification units may be set wherever desired. Four standard units are available. Thickness, density and type of material, as well as tolerances to be checked, determine which of the four units is to be applied. Complete details are available on request.

THE SHEFFIELD CORPORATION, Dept. CP, Dayton 1, Ohio.

When inquiring specify CP 377 — see handy form pages 2-3

Portable Unit Detects Leaks

Low as $\frac{1}{100,000,000}$ cc per Second

Employs mass spectrometer principle — may be operated by inexperienced help

USES — Wherever vacuum or pressure is used, this detector determines where and how much leakage occurs. Instrument provides a method for inspecting finished parts and assemblies, testing vacuum or pressure tight elements, checking barrier porosity and maintaining equipment used in high vacuum processes.

FEATURES — Since the instrument requires no adjustment during a leak survey and the ionization chamber is inherently fast, rapid leak detection and measurement is possible. Simplicity of operation, always essential where unskilled operators are doing the work, is enhanced not only by the few adjustments but also by the simultaneous operation of an audio alarm and indicating meter. One operator, using the audio alarm, can make a leak survey totally unassisted. The entire assembly uses only 850 watts and negligible amounts of helium and liquid air are required. The electronic chassis with their vacuum tubes, transformers, potentiometer screws, etc., being mounted on the back of the door, which has a removable panel, can be reached without any loss of time. The front, rear and top of the leak detector cab-

inet have hinged doors and removable panels which reveal the entire system should service be necessary.

DESCRIPTION — The model 24-101 vacuum leak detector is essentially a simplified, portable mass spectrometer, designed for the single purpose of detecting minute traces of helium. This is done by use of a special ionization chamber which accomplishes the electronic separation of the helium molecules, by reason, only, of their mass, from all dissimilar molecules in the atmosphere being examined. Thus by connecting the instrument to an evacuated system, and applying helium to the suspected areas, it is possible to locate leaks far too small even to be detected by other means.

Although most applications of the vacuum leak detector are in the vacuum field, it is also applicable to pressure systems and elements by including helium in the atmosphere on the pressure side and evacuating a chamber surrounding the suspected area or entire unit. Since portability is advantageous or necessary in most applications, the vacuum leak detector is furnished as a complete unit, factory mounted, wired and assembled in a compact cabinet with ball-bearing, rubber-tired

casters. The equipment can be readily used anywhere in the plant where 115 volts, 60 cycle power is available. The only operating supplies required are dry ice or liquid nitrogen, and helium gas. No water is needed. Since helium applied externally to a closed system can only enter through leaks, its presence inside a system is therefore a definite indication of leaks. To determine the presence and location of the leak in an evacuated system, one of two methods may be used depending on the configuration of the system and the type of information desired. These are the envelope and probe method. The envelope method involves completely surrounding a suspected part or area with helium. The presence of a leak in the enclosed area is immediately determined and the actual rate of leakage may be measured. In the case of the parts, those found to be defective can later be scanned by the probe method, if it is necessary to know the exact location of the leak. In the case of the probe method, a fine stream of helium is moved across a suspected area until the Leak Detector indicates the presence of the leak being sought. The probe method would be employed in the majority of cases since it is more convenient and gives the exact location of the leak. Once helium enters the vicinity of a leak it is quickly drawn into the vacuum system. It reaches the leak detector in a length of time dependent upon the ratio of the volume under test to the speed of the evacuating pumps, and to some extent upon the pressure at which the system is being operated. The presence of helium is rapidly detected by means of the ionization chamber and the signal system is operated. The audible note produced by a loud speaker located in the cabinet has a pitch roughly proportional to the size of the leak. A

meter mounted on the control panel permits accurate reading of the partial pressure of helium which has leaked into the vacuum under test. This provides quantitative results when compared to the standard leak. Sensitivity has been adjusted to eliminate false helium signals due to the natural helium in the atmosphere. The instrument detects leaks which are so minute it would take three years for a total of one cc of air to pass through the hole. This corresponds to a leak rate of about .00000001 cc per second.

The normal operating pressure of the ionization chamber is 10^{-4} mm of mercury. Since there is a pressure drop in the line connecting the leak detector to the test sys-



Portable vacuum leak detector.

tem, a pressure of slightly less than 10^{-3} mm. hg. on the system size of the throttle valve will give an ionization chamber pressure of 10^{-4} mm. hg. This condition is obtained with the throttle valve wide open. At the minimum auxiliary pumping rate, maximum sensitivity is provided. When the test system must be held at some pressure greater than 10^{-3} the throttle valve of the leak detector must be closed sufficiently to decrease the ionization chamber pressure to the proper value. By doing this, however, sensitivity is slightly decreased. Theoretically the instrument can be used on systems having pressure all the way up to atmospheric but the throttle valve cannot be adjusted that closely. With pressure less than 10^{-3} in the test system, sensitivity remains relatively constant.

Decisions on the pumps needed and the location of the leak detector inlet depend upon the degree of vacuum existing in the outside system, the pumping rate and the suspected location of the leak. In those cases, where the pressure in the test system is less than 10^{-3} the connection is best made between the diffusion pump and the fore pump. If the fore pump alone cannot achieve the desirable pressure and maximum sensitivity is required, a diffusion pump is necessary. It is usually advantageous to locate the leak detector inlet at a point in the vacuum system where it is not necessary for the helium to flow in a direction opposite to that of the evacuating pumps. Literature on the Model 24-101 is available on request.

CONSOLIDATED ENGINEERING CORPORATION, Dept. CP, Dept. CL, 620 N. Lake Ave., Pasadena 4, Cal.

When inquiring specify CP 378 — see handy form pages 2-3

FEBRUARY, 1947

An Announcement

TO THOSE INTERESTED IN INFRA-RED SPECTROSCOPY and INFRA-RED DETECTION and MEASUREMENT

FOR over twenty years the Eppley Laboratory, Inc. has endeavored to be of service to Science and Industry in America by supplying thermopiles, pyrheliometers and other equipment for the detection and measurement of radiant energy.

During the war years great forward strides were made in this field, particularly with respect to the detection and measurement of infra-red radiation. At the March 1946 meeting of the American Optical Society, held in Cleveland, much of this progress was revealed.

Of particular interest to those present was the disclosure of the Golay infra-red detector, developed at the Signal Corps Engineer-

ing Laboratories under the direction of Dr. Marcel J. E. Golay. This device was acclaimed as presenting the best all around characteristics of sensitivity, speed, reliability and spectral uniformity of response.

The Eppley Laboratory, Inc. takes pleasure in announcing that it has completed arrangements for the manufacture of the Golay infra-red detector, in the belief that this recent addition to its line of infra-red devices will be of service to those engaged in near and far infra-red spectrographic work or in other techniques involving the detection and measurement of radiant energy.

The manufacture of these units is under the personal supervision of Dr. Golay. Literature is available upon request.

EPLAB

Trade Mark

THE EPPLEY LABORATORY INC.

Scientific Instruments

NEWPORT

RHODE ISLAND

U.S.A.

When inquiring specify CP 379 . . . see information request blank, pgs. 2-3

A U-TYPE Absolute PRESSURE GAUGE BY MERIAM

Measuring directly in inches
or millimeters of mercury

This new instrument is proving notably popular in various industries for the measurement of absolute pressures from one millimeter of mercury to the equivalent atmospheric pressure.

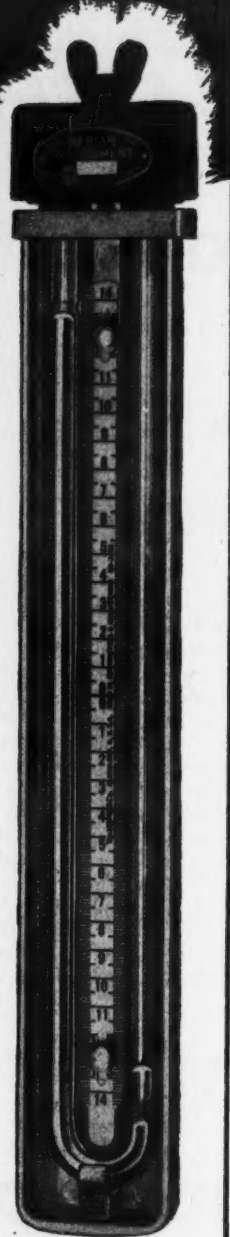
It is a U-tube manometer with one leg sealed and filled with mercury; the other open tube leg connects to the source of pressure to be measured. The tube is removable and can be easily replaced, when necessary, with another tube, mercury filled, shipped directly to location.

Of simple design—no cams, gears, levers—the Meriam U-Type Absolute Pressure Gauge is accurate and dependable. It is strongly built for lasting service. The gauge head fastens to the body by a single wing nut. Available in wall or flush front mounting styles. The wall mounted unit, illustrated, is Model C-1142 WM and is fully described in catalog sheet C-1142 WM—available upon request.

**THE MERIAM
INSTRUMENT CO.**
10940 MADISON AVENUE
CLEVELAND 2, OHIO
Western Division:
1418 Wilson Ave., San Marino 9, Calif.
In Canada: Peacock Bros. Ltd., Montreal

MERIAM ★
★ *Instruments*
ESTABLISHED 1911

MANOMETERS, METER VALVES AND GAUGES FOR THE ACCURATE MEASUREMENT
OF PRESSURES, VACUUMS AND FLOWS OF LIQUIDS AND GASES

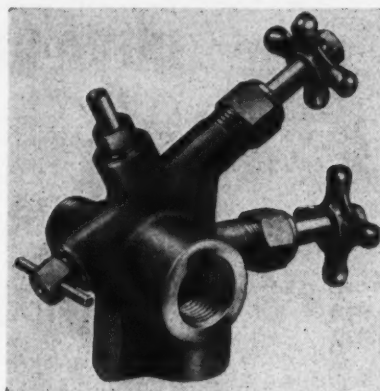


Instruments

Pressure Snubber, Manifold Valve, Aid Processing

Useful in multi-pointer draft-gauge installations
and for eliminating gauge line fluctuations

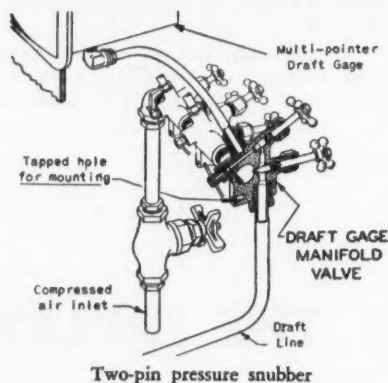
USES — Two useful power plant and process instrumentation auxiliaries: (1) Draft-gauge manifold valve, designed especially to simplify problem of blowing out draft lines in multi-point draft-gauge installations, and (2) a pressure snubber of improved design to eliminate



Draft-gauge manifold valve

gauge line fluctuations which produce excessive gauge wear and inaccurate readings.

FEATURES — (1) Draft-gauge manifold valve: manifold units, assembled in multiples corresponding with number of draft meter pointers, completely do away with makeshift rubber hose sections. Convenient operation acts as guarantee against neglect of necessary blowing out of lines. Zero-check plug incorporated in manifold facilitates testing of instruments. Unit is reversible, per-



Two-pin pressure snubber

mitting mounting under conditions where draft line is desired to run upward or downward from instrument panel. Meter valve can be set, in general service, to give any desired dampening of the pointer it serves. (2) Pressure snubber: As indicated in accompanying section drawing, two pins are used rather than one. Normal variations in fluctuation intensity are handled by one or both pins, eliminating need for extra pins.

DESCRIPTION — (1) Draft-gauge manifold valve: connects a compressed air supply permanently to manifold. One of valves in unit shuts off meter line while

Edward RELIEF VALVES

for
economical
PROTECTION against
sudden pressure increases

... for pump lines, drums, heat exchangers and unfired pressure vessels generally ... for the power, chemical process, petroleum, and marine and general industrial fields ... for water, steam, oil or vapor services.

Forged carbon steel body, stainless steel seat and ball, carbon or stainless steel spring. All valves factory set for the required relieving pressure.

SIZE	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
Center to End	1 1/4"	1 1/2"	2 1/4"	2 3/4"	2 3/4"	3 3/4"	3 3/4"	
Center to Top	6 1/2"	7 3/4"	9 3/4"	10 3/4"	12 3/4"	14 3/4"	16 3/4"	
Weight-lbs.	2 1/2	4 3/4	6 3/4	13	19 1/2	31	40	

Send for Edward Catalog No. 103

Edward Valves, Inc.
SUBSIDIARY OF ROCKWELL MANUFACTURING COMPANY
EAST CHICAGO, INDIANA

When inquiring specify CP 381 — see handy form pages 2-3



BUFFALO HAMMER MILLS

Used for
GRINDING
PULVERIZING
CRUSHING
SHREDDING &
DEFIBERIZING
in practically every
industry.

Flexible welded design permits fast delivery of Buffalo Hammer Mills as well as an unlimited number of models for special and standard application, — lab models, too. Capacities 1/2 to 200 H.P.

Write today for CATALOG and PRICES.

**BUFFALO HAMMER MILL
CORPORATION**
23 WASHINGTON ST., BUFFALO 3, N. Y.
Manufacturers of Hammer Mills Exclusively Since 1928

When inquiring specify CP 382 — see handy form pages 2-3

CHEMICAL PREVIEW

When inquiring specify CP 380 — see handy form pages 2-3

Instruments

the other permits flow of compressed air through draft line to remove fly-ash. (2) Pressure snubber: since the two pins are mounted at side of unit, out of the line of flow, adjustments are effected without disturbing the line. Production of both of these units, suspended during the war, has been resumed. Write for details.

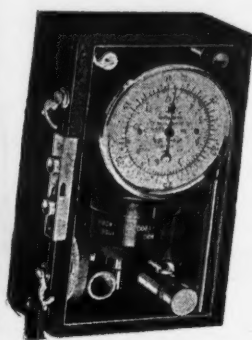
THE PARKER APPLIANCE COMPANY, Dept. CP, 17325 Euclid Ave., Cleveland, O.

When inquiring specify CP 383 — see handy form pages 2-3

★

Hand Tachometer Reads Direct In RPM Or FPM.

3 models cover ranges from 30-120 to 12,000-48,000 rpm or 15-60 to 6,000-24,000 fpm.



Hand tachometer with rotating gear shift

USES — Instrument is used to indicate the R. P. M. of revolving objects, right or left, such as shafts, spindles, etc. FEATURES — Accuracy within $\frac{1}{2}$ of 1%. "Dead beat" — due to improved damping device. Accuracy not affected by electricity, magnetism, changes of temperature, moisture. DESCRIPTION — Unit is well balanced which permits it to be used horizontally, vertically or in any other position. Rotating gear shift is dustproof. Indicates directly in rpm or fpm. Surface or peripheral speeds of travelling objects are indicated without calculation or timing. Speed variations occurring during a fraction of a revolution, or belt slippage may be measured. Hand tachometer is available in three models in ranges from 30-120 rpm to 12000-48000 rpm and 15-60 fpm to 6000-24000 fpm. Each model has a 3" dial with quintuple range. Overall length $5\frac{1}{2}$ "-net weight 19 oz. Additional information on request.

O. ZERNICKOW CO. Dept. CP, 15 Park Row, New York, N. Y.

When inquiring specify CP 384 — see handy form pages 2-3

★

Remote Repeater Stations Function 300 ft. from Weight Measuring, Tension Indicating Unit

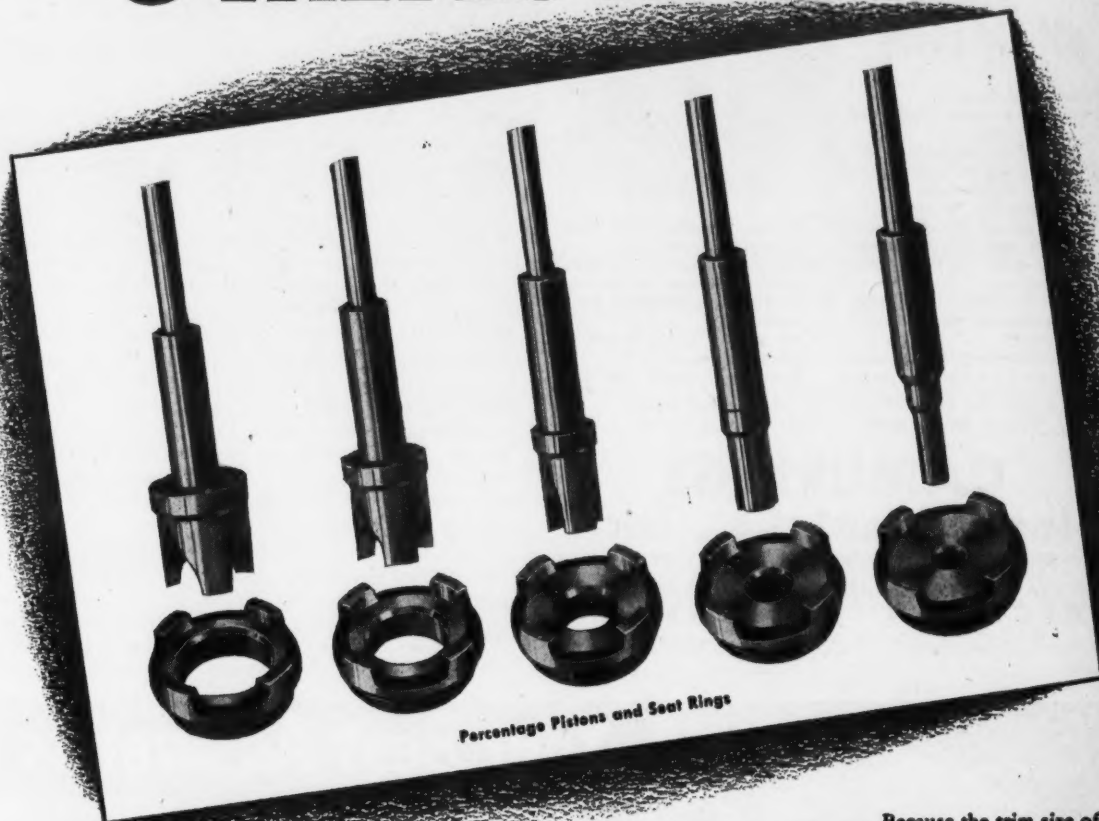
Often, in weight measuring or tension indicating, it is impossible for the operator to be close enough to the measuring instrument to read it. In steel mills, warehouses, paper mills, or wherever loads must be weighed, this difficulty is being overcome with Tens-O-Trol. Utilizing remote repeater stations as far as 300' from the actual measuring Dynamometer, this instrument is described and illustrated in a printed one-page bulletin which lists applications, prices and features. A combination of the precision Dillon Dynamometer and highly responsive, self-synchronous motors. Write for this literature.

W. C. DILLON & COMPANY, Inc., Dept. CP, 5410 W. Harrison St., Chicago 44, Ill.

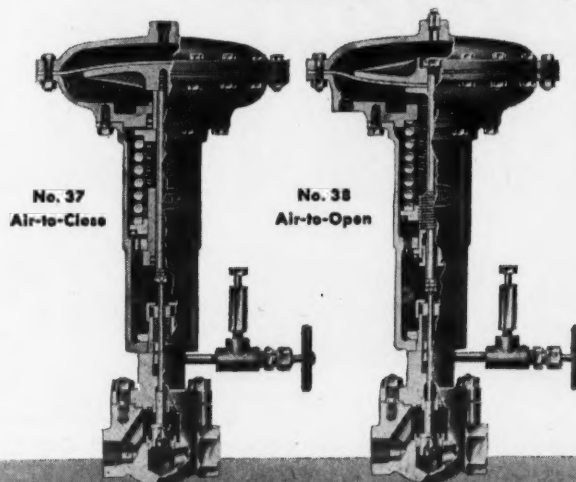
When inquiring specify CP 385 — see handy form pages 2-3

FEBRUARY, 1947

The Interchangeable Plug and Seat Ring in Masoneilan Percentage Piston Control Valves Gives You 5 VALVES IN ONE



Percentage Pistons and Seat Rings



No. 37
Air-to-Close

No. 38
Air-to-Open

Because the trim size of Masoneilan Percentage Piston Valves is interchangeable, you can easily change any valve from one size to another by merely replacing the plug and seat ring. Since trim sizes are available in $\frac{1}{8}$ ", $\frac{1}{4}$ ", $\frac{3}{8}$ ", $\frac{1}{2}$ ", and $\frac{3}{4}$ ", it means that you get 5 valves in one by simple conversion of the trim.

The flow range of orifice sizes of from $\frac{1}{8}$ to $\frac{1}{4}$ inch represents a relative capacity ratio of 36 to 1. The capacities of the Percentage Piston Valves have been selected and spaced for the primary purpose of covering the desired range of flow with the minimum number of trim sizes.

In addition to interchangeable trim, these control valves give you the excellent flow characteristics of larger size valves even down to the $\frac{1}{8}$ " size. The orifice diameter has been held to a minimum to reduce the erosive effect of high velocity fluids. Forged steel globe type body provides unusually large capacity.

Investigate Masoneilan Percentage Piston Control Valves. Catalog 301 gives complete information on construction, characteristics, selection and other important data. Write for your copy.



MASON-NEILAN REGULATOR COMPANY

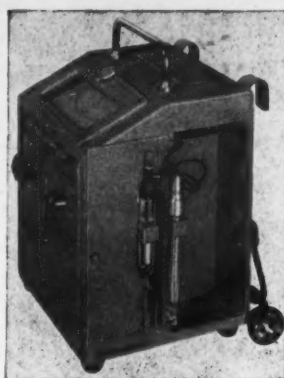
1203 Adams Street, Boston 24, Mass., U. S. A.

New York • Buffalo • Chicago • St. Louis • Philadelphia • Houston • Pittsburgh • Cleveland • Tulsa
Atlanta • Los Angeles • San Francisco • Mason Regulator Company of Canada, Ltd., Montreal and Toronto

When inquiring specify CP 386 . . . see information request blank, pgs. 2-3

THE NEW CAMBRIDGE INDUSTRIAL MODEL DIRECT READING pH METER

- Direct-reading.
- Operated from any AC line current.
- Completely portable. Electrodes are integral parts of the instrument.
- Accurate to .10 pH.
- Shielded glass electrodes permit use of electrodes away from the instrument if desired.
- May be used on a bench or operated from a wall mounting.
- Self contained in one metal case including electrodes, beaker, KCl and buffer solutions.
- Extreme stability makes only occasional standardization of electrodes necessary.
- Automatic temperature compensator.



Send for bulletin 901

Cambridge also makes Electron-Ray Research Model accurate to .02 pH and Laboratory Model accurate to .05 pH.

CAMBRIDGE
Instrument Co., Inc.
3706 GRAND CENTRAL TERMINAL NEW YORK 17, N. Y.
PIONEER MANUFACTURERS OF
PRECISION INSTRUMENTS

When inquiring specify CP 387 — see handy form pages 2-3

Instruments

Pulse Timer Has Accuracy of One-half Percent of Full Dial Scale

Available in 12 time ranges from 15 seconds to 24 hours

USES — This timer is designed to repeat continuously electrical impulses of a definite set duration at the end of successive identical time intervals, the length of which may be readily adjusted over the dial range of the instrument. The electrical pulses furnished by the timer may be utilized to initiate operations of automatic machinery in accordance with a repeating time cycle. Timer is particularly suitable for industrial applications which include: automatic lubricators, conveyors, sludge pumps, bar screens, electron tube testing, feed water control and signalling systems.

FEATURES — A repeat accuracy of $\frac{1}{2}$ of one per cent of full dial scale is achieved by a design which provides simplicity of moving parts, with extremely rugged construction and long operating life. Interruption of power supply does not reset the timer. Instead, the time cycle continues from the point of interruption when power is restored. This is of special benefit in control of chemical mixing and feeding systems.

DESCRIPTION — Twelve time ranges varying from 15 seconds to 24 hours are available. A double throw switch permits the selection of a short on and an adjustable off cycle, or the reverse, namely, short off with adjustable on cycle. The length of the time cycle can be changed within

DETECT FUEL WASTE IN 40 SECONDS

with the... **FYRITE**
CO₂ INDICATOR



The FYRITE makes accurate CO₂ analysis of the flue gases easy—and CO₂ percentage is the direct index of fuel wasted up the stack due to needless excess air being drawn into the furnace. The FYRITE is sturdy, spill-proof—accurate within $\frac{1}{2}$ of 1% CO₂. No setting-up necessary; no valves, clamps, or leveling bottle. More than 13,000 are in successful use.

Send for Bulletin 703

\$24.00 Complete with rubber aspirator bulb, industrial type flow filter, and carrying case.

BACHARACH

Industrial Instrument Co.
7000 BENNETT ST.
PITTSBURGH 8, PA.

Also Available!
OXYGEN INDICATOR
for DIRECT Oxygen Analysis
Employs FYRITE principle... accuracy not affected by temperature and atmospheric conditions, or by presence of other gas in sample.
Ask for Leaflet 700

When inquiring specify CP 389 — see handy form pages 2-3

Your Best Answer is Dillon



DILLON STAINLESS STEEL THERMOMETER

A precision instrument available with 3" or 5" dial and in 0-200, 50-500, 150-750, and 200-1000 degrees F. Pressure-proof, moisture-proof, rugged construction. 1/2" standard pipe thread connector. 5" and 9" stems standard—extra long stems to order. For ovens, kettles, air conditioners, diesel engines, etc. Light weight. Accurate to 1% of range over entire scale. Can be supplied with lucite crystal if required. Prompt shipments!



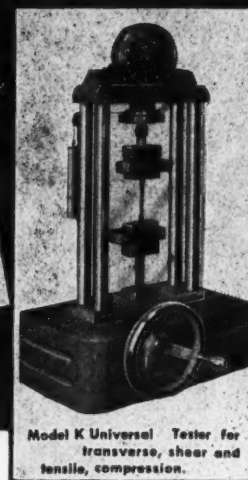
Remote reading Tens-O-Trol indicates weight or tensile pull.



Traction Dynamometer for all types of load measuring applications.



Mechanical pressure gauge indicates pressure in vices, presses, etc.



Model K Universal Tester for transverse, shear and tensile, compression.

W. C. Dillon & Co., Inc. specialize in precision testing equipment of a diversified nature. These outstanding products are used by leading concerns in virtually every type of industry. Temperature measurement, pressure indication, physical strength, weight indication, tension indication—all are easy with Dillon instruments. And, prices are economical. Dillon engineers will gladly assist in adapting this equipment to your problems. No obligation. Delivery of all Dillon products is prompt. Catalogs, folders and photographs are available on any of the above products. Write today specifying products you are interested in!

Look to Dillon for the unusual in precision test equipment!

W. C. DILLON & CO., INC. 5419 West Harrison Street
Chicago 44, Illinois

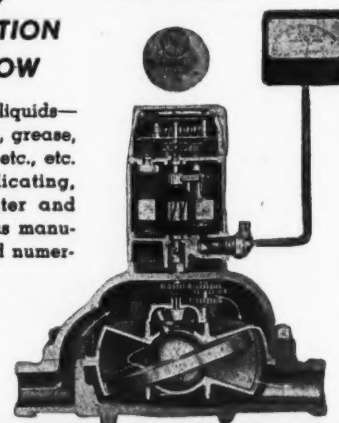
When inquiring specify CP 388 . . . see information request blank, pgs. 2-3

NEW HAYS VERIFLOW TOTALIZING-INDICATING METER

Featuring
REMOTE INDICATION
OF RATE OF FLOW

For practically all liquids—tar, molasses, crude oil, grease, paint, varnish, syrups, etc., etc.—for measuring, indicating, totalizing flow of water and chemicals in continuous manufacturing processes and numerous other uses. Its remote indicating feature is new—get the complete story.

SEND FOR
BULLETIN 46-766



The HAYS CORPORATION
SINCE 1901 COMBUSTION INSTRUMENTS AND CONTROL MICHIGAN CITY, INDIANA, U.S.A.

When inquiring specify CP 390 — see handy form pages 2-3

CHEMICAL PREVIEW

the dial range and may be adjusted during operation. Pointer indicates the time setting for the total time cycle and controls the interval between pulses. A knurled knob located at the lower right of the dial locks the pointer at the desired time setting. Pulse time is controlled by a cam mechanism which is adjusted at the factory for the proper pulse time. Several cams are available to cover the range of minimum and maximum pulse times. Main operating mechanism is composed of a rugged mechanical pawl clutch which is spring loaded and is positively disengaged by a stationary trip, causing the timer to reset upon completion of the time cycle. A single pole, double throw, quick-make, quick-break switch is utilized which will handle a 1/3 H.P. load; a 250 watt incandescent lamp load; a 1200 watt heater load; or solenoids in which the inrush does not exceed 15 amperes at 110 volts. Complete details may be secured on request.

THE R. W. CRAMER COMPANY, Inc., Dept. CP, Centerbrook, Conn.

When inquiring specify CP 391 — see handy form pages 2-3

Steel Drum Liquid Level Gauge Tells Contents at a Glance

8 oz., cast aluminum device screws into 30-50 gal. drums; faucet attaches



Steel drum liquid level indicator

USES — For anyone dispensing any liquid from 30 to 50 gal. steel drums, this instrument will avoid last-minute shortages, guard against pilferage, make it easier to keep inventories, and aid in maintaining an accurate re-order system. For indicating liquid levels within drums.

FEATURES — This indicator makes tapping and measuring

a thing of the past; you always know exactly what quantity remains within drums. Can be installed on all standard 30 to 50 gal. steel drums as easily as attaching a faucet. When drum is emptied, entire assembly is removed and attached to a full drum. Provides a constant, daily, visual check. Eliminates guesswork. Use with any liquid that can be stored in steel drums.

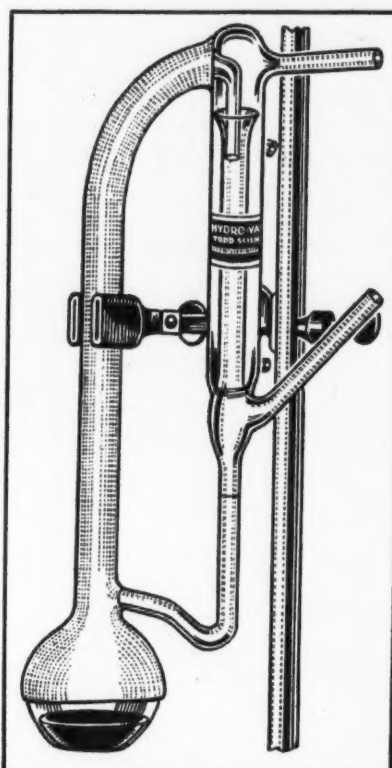
DESCRIPTION — U. C. Indicator. Simply screw the indicator into drum faucet opening, then screw faucet into opening on indicator body. Release locking device, and calibrated indicator is ready for use. Pointer of indicator is thus located directly above faucet, where liquid level of oil, solvent or other fluid can be observed at a glance. Weighs only 8 ozs. Cast aluminum body fits any standard 3/4" faucet. Wrench pads enable tight mounting, protect indicator during installation. Each unit calibrated and tested before shipment.

U. C. INDICATOR SALES, Dept. CP, 624 E. Locust St., Milwaukee 2, Wis.

When inquiring specify CP 392 — see handy form pages 2-3

FEBRUARY, 1947

The EMIL GREINER COMPANY Announces Its Appointment As DISTRIBUTING AGENT for the TODD HYDRO-VAC PUMP*



TODD HYDRO-VAC PUMP*

Recommended for

Vacuum distillations
Vacuum fractionations
Vacuum extractions
Vacuum sublimations
Vacuum pyrolyses
Drying apparatus of the Abderhalden type
Molecular still distillations
Drying high boiling liquids in bulk
And many other vacuum operations in chemical, physical and biological laboratories.

Operating efficiently in the presence of moisture and non-condensable or corrosive vapors, the new calibrated TODD HYDRO-VAC PUMP,* a specially designed all glass, mercury diffusion pump, rapidly produces an ultimate vacuum of 0.00001 (0.01 micron) of mercury. Used in series with a water aspirator pump, this compact pump is very useful as a general source of vacuum; also highly recommended for numerous laboratory vacuum operations evolving moisture, non-condensable or corrosive vapors that would damage or prohibit the use of a mechanical pump. The forepump is an ordinary water aspirator pump capable of producing 25 mm. of vacuum or better.

The new TODD HYDRO-VAC PUMP* may also be advantageously used in series with an ordinary mechanical pump as the forepump, instead of the aspirator pump, to give an ultimate vacuum which is so low that it shows an apparent zero pressure reading when measured in all glass system with a very sensitive McLeod gauge (0.000002 mm. of mercury or better).

OPERATIONAL DATA

Ultimate vacuum of 0.00001 mm. (0.01 micron). (With water aspirator forepump.)
Ultimate vacuum of 0.000002 mm. (0.002 micron) or better. (With mechanical forepump.)
Calibrated for maximum vacuum.
Maintains 100% of original efficiency on prolonged use.
Not damaged by moisture, non-condensable or corrosive vapors.
Very efficient due to high vapor velocity jet construction.
Rapid evacuation of apparatuses.
Automatic and silent operation.
Requires no maintenance.
Easily cleaned.
Mercury reservoir gas or electrically heated.

PHYSICAL DATA

Construction _____ Pyrex glass
Amount of mercury required _____ 1 pound
Height _____ 13 inches
Weight (without mercury) _____ 1 pound
Table space occupied _____ 9 sq. in. approx.

TODD HYDRO-VAC PUMP as shown, calibrated but without insulation and mercury. Complete operating instructions included \$25.00

*The name "HYDRO-VAC" is registered in the United States Patent Office, and designates a product designed and manufactured solely by the TODD SCIENTIFIC COMPANY.

Available for Immediate Delivery

THE EMIL GREINER CO.

161 SIXTH AVENUE



NEW YORK 13, N. Y.

New England Office: 112 BROADWAY, CAMBRIDGE, MASSACHUSETTS

When inquiring specify CP 393 . . . see information request blank, pgs. 2-3

REVOLUTIONARY AUTOMATIC PRECISION CONTROL

Easy to operate for:

- Tempering
- Annealing
- Testing



**HUPPERT
MODEL 2
DELUXE**

\$75.00

Never before has this large-furnace precision automatic control been available in a laboratory furnace. It's startling! It's unequalled! Any desired temperature in the furnace range can be set and automatically maintained. LD. $4\frac{1}{4}" \times 3\frac{3}{4}" \times 4\frac{1}{4}"$. 115 A.C. operation. Heat range 325° to 1600° F. Ask for catalog on larger furnaces.

K. H. HUPPERT CO.

6822 COTTAGE GROVE AVE. CHICAGO 37, ILL.

When inquiring specify CP 394 — see handy form pages 2-3

Glo-tech

**PRECISION-BORE
GLASS TUBING**

is consistently precise!

GLO-TECH tubing is made by an exclusive new process, forming the glass to precise internal dimensions! A tolerance of plus or minus 0.0002 inches is consistently obtained by this process for reshaping chemically resistant boro-silicate glass. In the Glo-tech process, the chemical properties and surface hardness of the glass are retained by automatic control of heat.

Glo-tech tubing is made with bores from 0.013 to 5 inches, and up to 100 inches in length. A variety of shapes for a variety of uses may be furnished, including round, square, oval, etc. Precision-bore capillary tubing may now be readily obtained for precision viscometers, gas sampling equipment, flow-measuring restrictions, McLeod gages, etc.

You may obtain full details on this unusual product by writing to us for our fully descriptive and illustrated Catalog 95.

FISCHER & PORTER CO.

Dept. 11-9E, Hatboro, Pa.

When inquiring specify CP 395 — see handy form pages 2-3

Instruments

Thermometer Has Replaceable Refill Stem.

Available in angle and straight stem types

USES — This separate socket industrial thermometer may be used for many applications requiring temperature indications.

FEATURES — Design eliminates the necessity of returning the thermometer to the factory for repair, and makes it possible for the maintenance man to insert a new refill stem in a few minutes, without loss of production time.

DESCRIPTION — Available in angle and straight stem types with heavy armor protection to resist corrosion and dirt. Equipped with flat bore mercury stripe in a yellow column for easy reading. Complete details are included in bulletin 55.

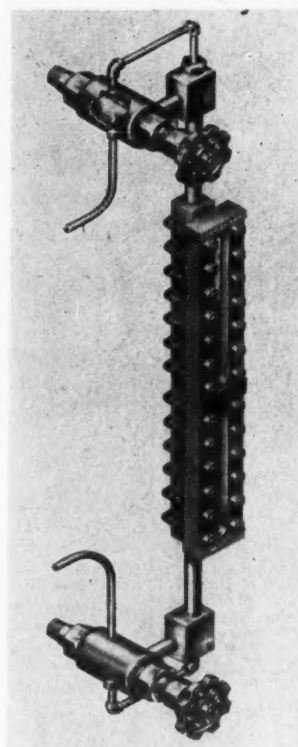
ACCURACY SCIENTIFIC INSTRUMENT COMPANY, Dept. CP, Philadelphia, Pa.

When inquiring specify CP 396 — see handy form pages 2-3

★

Gage Heats Sluggish, Cools Boiling Liquids for Reading

*Withstands pressures to 3200 and 2000 lbs. at
100° F.; 1200 and 600 lbs. at 1000° F.*



Reflex type heating or cooling
liquid level gage

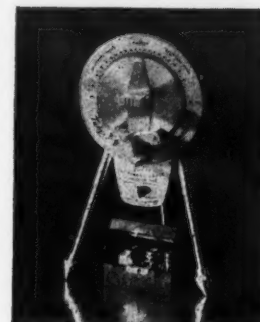
through them, can also be heated or cooled. Auxiliary tube can be supplied in corrosion resisting metal.

DESCRIPTION — Liquid Level Gage. Heated or cooled

USES — New type heating and cooling liquid level gage, available in both reflex and transparent types, for use in process plants, especially where liquid in gage is too sluggish for proper reading or where, because of low boiling point, liquid tends to boil and cause incorrect readings. Also useful in cold climates where liquid in standard type gage might freeze. Can be used on corrosives (see Features).

FEATURES — Gage contains an auxiliary tube through which a heating or cooling gas or liquid can be circulated for the purpose of raising or lowering temperature of the liquid in the gage itself. Auxiliary tube passes concentrically through liquid chamber of gage, affording intimate contact with liquid being heated or cooled. Valves used in this assembly (No. 93) are jacketed so that liquid, when passing through them, can also be heated or cooled. Auxiliary tube can be supplied in corrosion resisting metal.

PRECISION MEASUREMENT of STIFFNESS *for*



**Thin Metallic Sheet,
Wire, Plastic Sheet,
Paper and Paper Board
and Other Flexible
Materials**

The Taber V-5 Stiffness Gauge brings to laboratories and testing departments an accurate, scientific practical method for measuring both the initial and normal stiffness of a wide variety of thin, flexible materials. It also permits the evaluation of their elastic or spring-like properties. The instrument is precision built, simple to operate. Light weight and portable. Motor driven — 115 volts.



TESTING DATA

This illustrated brochure gives full details on the instrument and how it is used. Write for free copy.

TABER INSTRUMENT CORP.
111 CP GOUNDRY STREET
NORTH TONAWANDA, NEW YORK

Taber V-5 STIFFNESS GAUGE

When inquiring specify CP 397 — see handy form pages 2-3

ANNOUNCING THE NEW

PRINCO

LIQUID DENSITY CONTROL

**FOR INDUSTRY OR
LABORATORY**

Continuous density indication and/or control of flowing liquids.
OPERATING CHARACTERISTICS
Operating pressure: As required to 25 p.s.i. max.
Differential pressure: 2" to 12" water.

Liquid return to line or atmosphere as required: by Venturi, orifice, pump, or direct.
Entering liquid temperature: 60 to 100° F. Built-in automatic control.
Range: 0.0075 to 0.1 Sp. Gr. or equivalent between 0.600 and 3.50 Sp. Gr. or equivalent.

CONSTRUCTION

Pyrex Glass, with metallized and soldered connections to 1/4" S.P.T. lines. Steel case with window for reading illuminated scale. Chamber readily accessible.

CONTROL AND RECORDING EQUIPMENT

Available as recorder and/or controller in the following forms depending upon desired modulated output:

1. PNEUMATIC, with adjustable throttling range.
2. PNEUMATIC, with adjustable throttling range and automatic re-set.
3. ELECTRICAL, with remote-mounting servo motor with linear position response.

Write or call today for full information and prices.

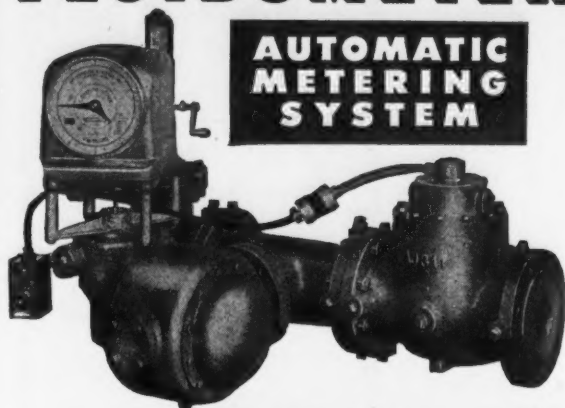
PRECISION
THERMOMETER COMPANY
PRINCO
PRECISION MEASUREMENT OF LIQUIDS

1404 Broadway Street, Philadelphia 30, Pa.

When inquiring specify CP 398 — see handy form pages 2-3

CHEMICAL PREVIEW

FLUIDOMETER



AUTOMATIC METERING SYSTEM

ACCURATELY BATCHES LIQUIDS OF HIGH OR LOW VISCOSITY

The Fluidometer System consists of: 1. A control unit. 2. A meter of suitable size, type and metal. 3. A solenoid valve. All three of these parts can be assembled in one closely related grouping, or placed remotely, according to plant convenience. Fluidometer's accuracy and dependability in batching liquids of either high or low viscosity has been proved by years of service under widely varying conditions. Bulletin F-44 sent on request.

HETHERINGTON & BERNER INCORPORATED
711 Kentucky Avenue, Indianapolis 7, Indiana

Builders of Portable and Stationary Asphalt Plants of all Types and Capacities

When inquiring specify CP 399 — see handy form pages 2-3

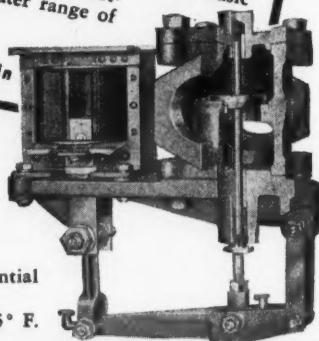
NEW—Direct Acting Solenoid Valve for 150 lbs. Differential Pressure

That's the biggest news about the new Johnson Solenoid Valve. Some sizes will operate under differential pressures up to 150 lbs., without pilot valves. All sizes end the time lag and wiredrawing that come with slow opening—the danger of clogging that comes with auxiliary pistons. Whatever your liquid level or flow control problems, investigate the new possibilities this Johnson design brings to solenoid valves. It offers all the basic advantages, with none of the shortcomings, for a far greater range of applications.

GET ALL THE FACTS
Write for new bulletin

WHERE CAN YOU USE THIS AUTOMATIC VALVE?

- Immediate full flow
- No pilot valves
- Up to 150 lbs. differential pressure
- Temperature to 365° F.



The Johnson Corporation

826 Wood St., Three Rivers, Mich.

When inquiring specify CP 400 — see handy form pages 2-3

Instruments

gages come in full range of sizes similar to standard gages, being designed for pressures to 3200 lbs. (reflex) and 2000 lbs. (transparent) at 100° F., or for 1200 lbs. (reflex) and 600 lbs. (transparent) at 1000° F. Further details on request.

JERGUSON GAGE & VALVE COMPANY, Dept. CP, Somerville 45, Mass.

When inquiring specify CP 401 — see handy form pages 2-3

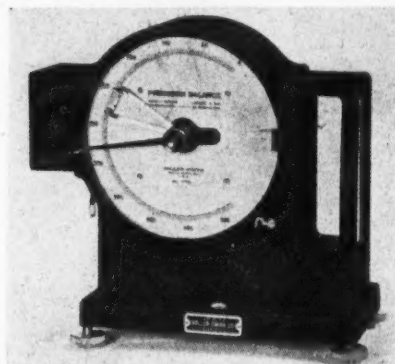
Precision Balance Useful in Production Weighing

Model B has accuracy of 1/5 of one per cent, model C, 1/10 of one per cent

USES — These precision balances are recommended for rapid determinations of the weight of small objects or materials where a number of weighings of approximately the same weight must be made. It is suitable for weighing such items as lamp filaments, small mechanical parts, granular substances, powders, liquids in the paint, chemical and food processing fields.

FEATURES — Large savings in weighing time are made. Guaranteed accuracy of model B is 1/5 of one per cent and model C accuracy is 1/10 of one per cent.

DESCRIPTION — The inside end of the spiral spring is attached to the axis of the shaft and the outside end is attached to the index pointer. Index lever is attached by the knurled nut to the same shaft as the index pointer so that when the index lever is rotated, it rotates the index pointer and winds up the spiral spring. This lifts the beam and when the small pointer fastened to the beam indicates zero, the rotation is stopped and the weight read. Angular relation between index lever and vernier may be varied by loosening knurled nut and shifting lever to the



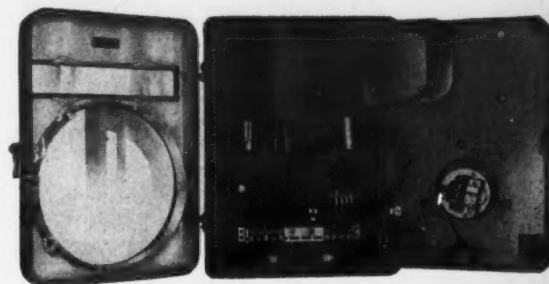
Model B precision balance

position most convenient for the operator. Adjustment for zero is made by rotating a knurled knob at the rear of the instrument. Material to be weighed is hung at the end of the weigh beam. Index lever is rotated until the beam is again in balance with balance pointer indicating zero. Vernier then indicates on the dial the weight of the material. Reading is obtained from the dial directly in milligrams or in any other unit for which the balance is calibrated. These two models are completely described in catalog 4540 which is available on request.

ROLLER-SMITH DIVISION, REALTY AND INDUSTRIAL CORPORATION, Dept. CP, Bethlehem, Pa.

When inquiring specify CP 402 — see handy form pages 2-3

Now... More Accurate ELECTRONICALLY!



NEW BRISTOL DYNAMASTER

Electronic Resistance Thermometer

Operates on the null balance principle... uses standard vacuum tubes... needs no levelling... gives super-sensitivity... extreme accuracy — 150°F. to + 400°F.... high speed. Write for Bulletin R900 for complete story.

THE BRISTOL COMPANY, 141 Bristol Road, Waterbury, Conn.



Engineers process control for better products and profits

AUTOMATIC CONTROLLING AND RECORDING INSTRUMENTS

When inquiring specify CP 403 — see handy form pages 2-3

"Try Me Free for 30 Days"



Air Line Protection: "Riddy" Offers Proof

Put Aridifier to work—prove, without obligation, its 92% removal of water, oil, dirt from compressed air lines. Contamination impinges on counter-rotating rotors... is hurled free of air stream by centrifugal force and flows to drain. No back pressure from baffles or filters—stays clean. Send for bulletin. Tell us air used in cu.ft./min. and gage pressure in lbs./sq.in. —we will provide correct unit.

Logan Engineering Company
4900 Lawrence Avenue, Chicago 30, Illinois

Logan ARIDIFIER
Dries and Cleans Compressed Air



When inquiring specify CP 404 — see handy form pages 2-3

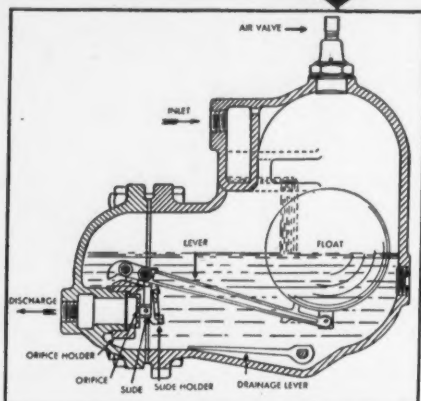
No Steam Waste Here

CONDENSATE IS DRAINED CONTINUOUSLY—PRODUCES ACCURATE, UNIFORM STEAM PRESSURE

ADVANTAGES

- No "Fill or Spill"
- No Priming, No Leakage
- No Hammer or Noise
- Positive Seal of Slide Valve

Made in 1/2", 3/4" and 1" pipe size for 150 and 300 p.s.i. and 750°F. — Cast steel bodies, stainless steel and bronze mechanisms, or in other metals. Catalog on request.

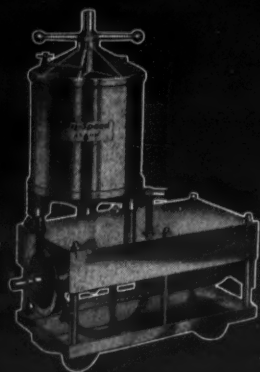
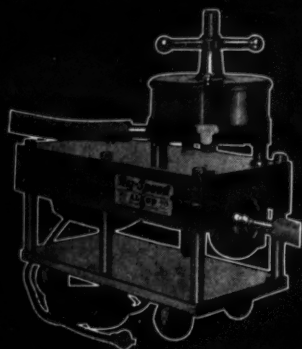


Steam-condensate mixture enters steam trap above condensate, not below or through it. Slide valve moves over discharge orifice with rising or lowering of float. Steam is never short-circuited. Continuous flow permits use of smaller trap for needed discharge. Minimum pressure drop and discharge resistance. Easy to clean quickly.

W. S. ROCKWELL COMPANY • 220 Eliot St., Fairfield, Conn.

ROCKWELL STEAM TRAPS

When inquiring specify CP 405 — see handy form pages 2-3



"Sealed-Disc" FILTERS FOR ALL LIQUIDS

"SEALED-DISC" Filters of many sizes and capacities, are meeting specific filter requirements in removing dirt, rust, impurities, moisture and even cloudiness from Chemicals, Plating Solutions, Liquid Plastics, Oils, Water, etc. The construction provides every advantage for obtaining positive, trouble-free filtration and at low cost.

You'll find the "SEALED-DISC" Filter ready for instant use, completely sealed, portable and easy to clean with a minimum of labor and time by your most inexperienced help.

Available in portable or fixed types with or without pumps, capacities ranging from 1 g.p.m. to many thousands of gals. per hour.

Write us giving complete details of liquids and quantities to be clarified. We shall be pleased to let you have our report and recommendations promptly.

ALSO ENGINEERING CORPORATION

Filters, Filter Pads, Pumps, Tanks, Mixers, Agitators

202 Alsop Square, Milldale, Conn.

When inquiring specify CP 406 — see handy form pages 2-3

Instruments

Reading Instruments by Pneumatic Transmission Reduces Fire Hazards, Piping Costs

"Pneumatic Transmission of Instrument Readings Over Long Distances" is a 12-page technical bulletin. It submits test data which concludes that pneumatic transmission for normal conditions is satisfactory up to 200', using 1/4" or 3/8" OD tubing; from 200 to 600', using 3/8" OD tubing; and, where accurate indication of fast flow changes or other variables is not required, may prove satisfactory from 600 to 1000' if flow, pressure or temperature conditions are "fairly steady." Although manufacturer does not recommend use of this system over 600', text suggests transmission from 1000 to 2000' may "sometimes" prove feasible where accurate recording of all changes in the variable is unnecessary. Advantages of remote transmission are said to include possibility of grouping several instruments in a central location without using great lengths of thermometer capillary, long leads of connecting piping from pressure gages, liquid level and flow meters. Piping of corrosives and inflammable liquids, often highly pressurized, thus need not be introduced into control house. Hydrofluoric acid is given as an example. Text describes manufacturer's New-Matic Transmission System, employing two matched, spring-and-bellow assemblies; also describes speed of transmission, giving equations, and discusses testing speed of pneumatic transmission. To obtain this literature, write for Bulletin B59-2.

THE BROWN INSTRUMENT COMPANY, (A Division of Minneapolis-Honeywell Regulator Co.), Dept. CP, Philadelphia, Pa.

When inquiring specify CP 407 — see handy form pages 2-3

★

Electronic Meter Determines Viscosity Of Opaque Materials

Useful as a plant control instrument to make a large number of measurements in a short time

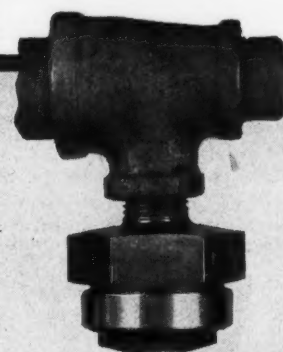
USES — Instrument is used for viscosity measurements and since the indication is by electrical means, opaque materials



Electronically operated falling ball viscosity meter.

such as paints, pigmented lacquers, asphalts, creams, pastes, emulsions, resins, or any material that a metallic ball will

NEW BLAW-KNOX AQUATOMIC FOG NOZZLE FOR BETTER FIRE PROTECTION



Ideal for fixed sprinkler installations—the new Blaw-Knox Aquatomic Nozzle blankets, cools and quenches—free flowing and non-clogging—maintains pattern at reduced pressure—a real advance in nozzle design.

Consultation invited



BLAW-KNOX SPRINKLER DIVISION

831 Beaver Ave.
Pittsburgh 12, Pa.

Offices in Principal Cities

When inquiring specify CP 408 — see handy form pages 2-3

CHEMICAL PREVIEW

pass through, may be measured.

FEATURES — As a plant control instrument it makes a large number of reliable viscosity measurements in a short time. Unit permits any number of tubes to be used interchangeably. Indication is positive and plainly evident even when the ball is moving slowly. Graduated balls permit the investigation of minor thixotropic effects at essentially the same rate of shear in each determination. Such determinations are valuable when studying the flow and levelling of paints.

DESCRIPTION — Operation of the instrument is based on the well known Stoke's law. Indication of the time of the falling ball is accomplished by means of an electronic circuit. Range is extended to cover from 50 to 1,000,000 centipoises. Very high viscosities may be measured in shorter interval of time, and by using balls of different density the time required may be varied to suit inside of wide limits. Balls are perfectly centered at the top and are released at a sufficient altitude to reach terminal velocity at the first indicator. Balls can be furnished with the specific gravity variable in steps between 1.0 and 9.5. For specific gravities between 4 and 9.5 the balls are furnished gold plated. A constant temperature control cooling jacket is built into the instrument as standard equipment. Standard meter is furnished for operation on 110-120v. 60 cycles. Complete details may be secured on request.

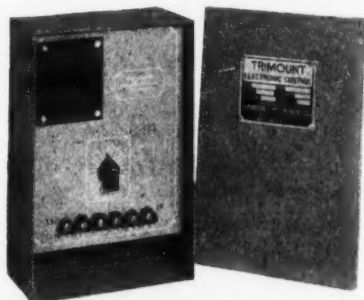
TECH LABORATORIES, Dept. CP, Jersey City 7, N. J.

When inquiring specify CP 409 — see handy form pages 2-3

*

Level Control not Affected by Foam on top of Liquid

*Controls levels of liquids and conducting solids in
open or closed tanks, vats, bins or hoppers*



Electronic level control with adjustable conductance control.

USES — Control is applicable for high, low and intermediate control of levels of caustics, acids, paints, food products, milk, water, chemicals, and other substances.

FEATURES — Unit has a new, sensitive conductance control which is adjustable to

conductivity of a specific substance and is not affected by foam or foreign matter on top of the liquid. It operates under extremes of temperature and pressure.

DESCRIPTION — An electrode installed in the tank or other container actuates a magnetic relay when it comes in contact with the conducting substance. The control unit can be used to actuate solenoid or motor operated valves, pumps, lights, alarm signals, or other electrical devices. Controls are available with circuits to handle one or more electrodes, and can be furnished in multiple installations for controlling a series of levels or various mixtures. Complete information on request.

TRIMOUNT INSTRUMENT CO., Dept. CP, 37 W. Van Buren St., Chicago 5, Ill.

When inquiring specify CP 410 — see handy form pages 2-3

FEBRUARY, 1947

PALMER-SHILE

MATERIALS HANDLING EQUIPMENT

Designed to do Specific Jobs Better

Combination

TRUCK and DRAIN RACK

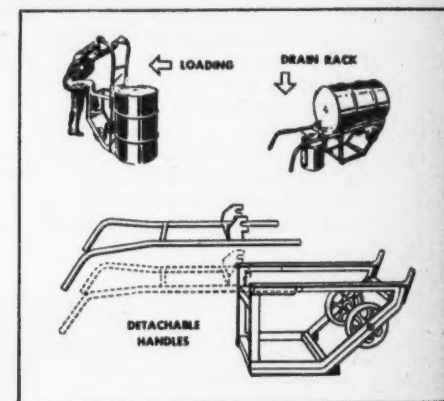
Loads Automatically

Weights only 90 pounds, yet handles barrels weighing up to 1,000 lbs. with surprising ease. Sturdy frame, free rolling wheels and proper balance make light work of trucking the heaviest drums...

Tilt truck against drum, drop sliding steel grip over top of rim—rock truck back to wheeling position and loading is automatic.

To use as drain or storage rack detach handles to conserve floor space. Slight downward push on truck handles raises wheels and lays rack on floor in convenient draining position. One pair of handles will serve any number of trucks.

Heavy angle iron frame, tubular handles, all welded construction.



TWO STYLES

With and Without Detachable Handles

Item NS-506 (Handles welded to frame)	\$42.50
Item NS-506 DH (Truck Complete with detachable handles)	44.50
Item NS-506 R (Item NS-506 DH without handles)	32.50
Item NS-506 H (Detachable handles only, for use with NS-506 R)	12.00

Order by "Item" number. Prices f.a.b. Detroit.

Barrel and Box Grab

Item NS-288 \$55.25

For picking up any wood or steel barrel, box or container, 40" diameter or less. 2000 lb. capacity. Rigid toggle construction. Weighs 35 lbs.

Drum and Barrel Sling

Item B-205 \$12.50

Handles barrels, drums, kegs—anything with a lip. Half ton capacity. Heavy welded chain and forged grab hooks. Weighs 8½ lbs.

Carboy Truck

Item B-488 M \$38.00
Item B-488 R \$42.00

Gripping yoke makes loading automatic. Hardened steel studs grip load—no slipping. All steel welded construction—20" wide, 48" in length—capacity 500 lbs. Wt. 75 lbs.

Barrel Truck

Item S-911-M \$33.50 (Metal Wheels)
Item S-911-R \$38.50 (Molded-on rubber wheels)

Automatically loads barrels up to 1,000 lbs. Heavy tubular welded construction—sliding grip. 24" wide—wt. 85 lbs.

Barrel and Box Skid

Light, sturdy, all steel welded construction. Handles heaviest barrel or box. 14" wide.

Item B-470-8 (8 feet) .. \$22.00
Item B-470-10 (10 feet) 27.50
Item B-470-12 (12 feet) 33.00

Palmer-Shile Co.

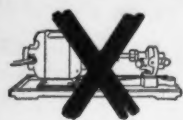
7128 West Jefferson Avenue

Detroit 17, Michigan

When inquiring specify CP 411 . . . see information request blank, pgs. 2-3

Eastern

PIONEERED CLOSE-COUPLED PUMPS



Long ago, our engineers discovered that the key to smooth vibrationless operation and long life was to utilize a common shaft for motor and pump. Even more important, they succeeded in building this better operation into smaller space through these close-coupled designs. This improvement has for years made every Eastern Pump a better pump. Each of more than 300 different models and modifications is the best for the purpose for which it was designed.

The pump illustrated, Model 3J, is a typical example of Eastern pump know-how. It is a three stage heavy duty centrifugal pump designed for pumping moderate quantities of liquids against higher pressures. The open vane impellers in each of the three pump chambers are mounted directly on the motor shaft extension thus making it unnecessary to use internal pump bearings. The pump is sealed by an easily adjustable stuffing box or a mechanical rotary seal with a lapped carbon or bronze face.

SPECIFICATIONS

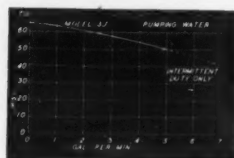
Type: Centrifugal. Size: 17 1/4" x 8 1/2" x 10 1/4".
Weight: 74 lbs.
Power: 3/4 H.P. motor.



PERFORMANCE

See chart below

If you have a pumping problem where small space, light weight, and trouble-free operation are factors, write us. We can recommend a model to suit your needs or, if the quantity involved is a reasonable number, we will design a special pump to meet your requirements.



EASTERN INDUSTRIES, INC.
SUCCESSORS TO
EASTERN ENGINEERING COMPANY
49 FOX STREET, NEW HAVEN 6, CONNECTICUT

★ IDEAS ★

Industrial ingenuity constantly hatches new ideas, many of which can be applied to similar problems in other plants. The Editors have selected these ideas and developments because of their interest and possible application in specific plant problems. If you would like more information on any of these, write direct to the manufacturers.

Advantages of Jacketed Type Steel Drier Rolls

Assure less weight, better heat transfer

The Lukens Steel Co. has built jacketed type steel drier rolls for industry for some sixteen years. Changes in design and construction have been made and it has been possible to increase both dimensions of the rolls. Lukens' latest contribution is depicted in the drawing which shows steam passage ways, the inner shell and its stiffening rings.

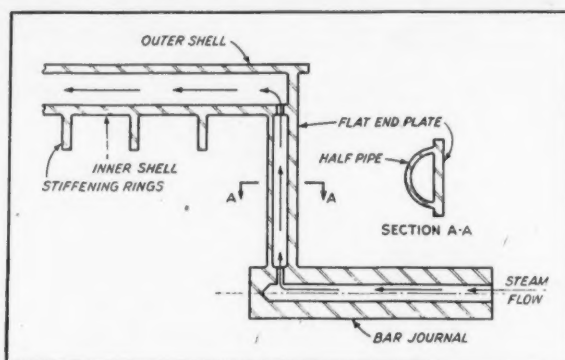
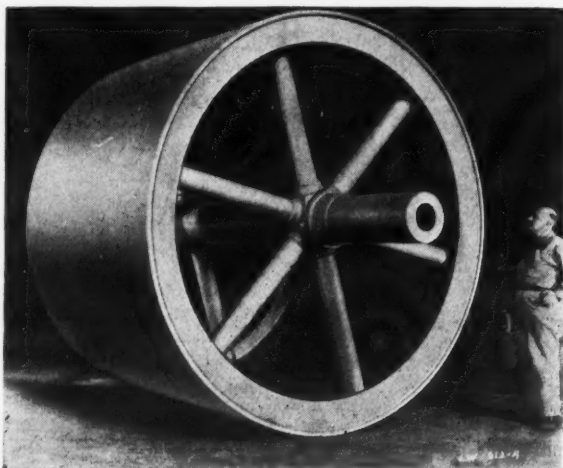


Diagram of steam passage ways, inner shell and stiffening rings

The photo shows the completely fabricated roll unmounted. This type of construction, as contrasted with the conventional cast roll, possesses the advantage of very much less weight per square foot of drying area and better heat trans-



Unmounted fabricated roll

fer on account of the restricted steam passage area and the resulting higher steam velocity. Decreasing the weight also means less power required for the rotation and less wear on the bearings.

The manufacturer claims less hazard in manufacturing the

steel jacketed rolls than is encountered in the cast roll. Some troubles are yet encountered with the jacketed steel roll where a doctor knife is used as steel, other than alloy steel, has proved too soft to resist the wear due to knife contact. The adoption of the jacketed steel rolls in various lines is increasing and the problems arising from varied uses are being solved. (Summarized from address by William Funk, Development Engineer, Lukens Steel Co., Coatesville, Pa.)

Flexible Piping System Vital to "Power Plant Trains"

Used to connect cars in mobile plants during war

A remarkable, yet little known innovation of the war was the "power plant train" developed and fabricated in this country for our Allies. A total of forty of these trains was produced and the fabricating division of M. W. Kellogg Co. supplied interconnecting piping for the entire train fleet. The trains were used to provide electrical power during the war for devastated areas. Each train was a complete power generating plant, with a capacity of 3000 kilowatts daily. It was naturally essential that the piping connecting moving cars have maximum flexibility and to meet this need special piping was developed. (As reported in the Kelloggram — Issue 3 — 1946. M. W. Kellogg Co., 225 Broadway, N. Y.)

How To Make Cleaning Solutions Last Longer

Upkeep at minimum concentration, careful check of temperature, are two main factors

There are many ways in which the life of cleaning solutions may be prolonged. A good starting point is to check the minimum concentration needed to obtain satisfactory cleaning. On many types of work faster cleaning is not necessarily obtained at greater concentrations. A little experimenting usually determines the minimum concentration required for all types of cleaning — still tank, washing machine, steam cleaning, hand brushing, etc. The next step is to see that cleaning solution is maintained at the specific minimum strength. Upkeep should be added in exact quantity, using a scoop or other suitable container. On large tanks additions should be made by weight. Where large tanks or washing machines are employed titrations should be employed to control upkeep. Temperature occupies a place equal in importance to solution concentration. It has been determined that for every 20 degree increase in temperature above 120 degrees F there is a decrease of approximately 50% in the time required for cleaning. It does not necessarily follow that boiling temperatures will give best results on all work. For example, brass will tarnish at very high temperatures. Milk and soft drink bottles

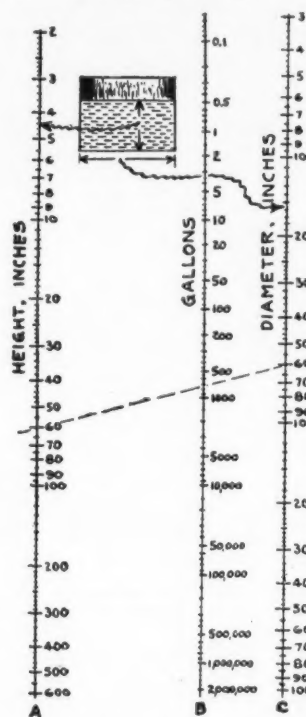
CHEMICAL PREVIEW

may break, etc. Another instance is the setting of casein residues on dairy equipment by high temperatures. There is an ideal temperature for every operation, just as there is an ideal concentration.

When a tank solution begins to become contaminated there are two things which can be done to extend its life. One is to skim the tanks in the morning, before heating, to remove floating greases and oils which have separated overnight. This helps to reduce contamination of the cleaning solution, thus prolonging its life. The second step is to make rinsing facilities just as efficient as possible. A check on efficiency of equipment results in savings. Be sure that washing machines are in first class condition, with nozzles operating properly and motors running at peak. In making the tests mentioned, titrating equipment and a heat-clean meter provide easy means of checking. (Summarized from Oakite News Service — December '46, Oakite Products, Inc., 22 Thames St., New York, N. Y.)

Chart Quickly Gives Cylindrical Tank Capacities, Dimensions

Covers range of sizes from 0.1 to 2,000,000 gallons



Tank capacity chart

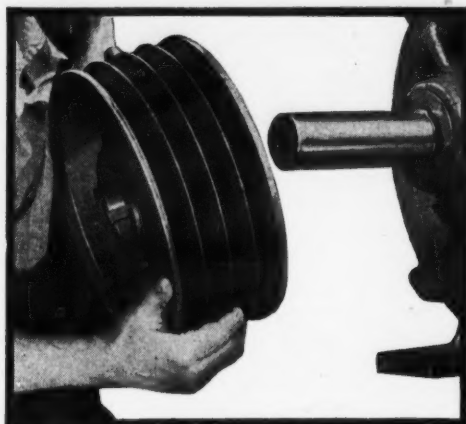
wide range. Inversely, the chart may be used to figure the size required if a tank is to hold a specific number of gallons. If the tank in question is to hold 740 gallons, a straight line is run through the figure 740 (Column B) and the intersection with Column A gives the height, while the intersection with Column C gives the diameter. By swinging a straight line around the desired point in Column B, the most economical height and diameter is easily obtained. (Summarized from "Asbestos" for September 1946, courtesy of the publishers — Secretarial Service, Inquirer Bldg., Philadelphia, Pa.)

FEBRUARY, 1947

Easy-Mounting, Fast-Locking Sheave

Pays Off

The First Time You Put It On!



"MAGIC-GRIP" sheaves offer time-saving, money-saving features!

EVEN if you install the sheave only once, and never change it again — it pays to get a "Magic Grip" sheaves! For frequent changes, naturally, your savings pyramid.

- No filing or reaming. "Magic-Grip" bushing slides easily, even on oversize shafts.
- No hammering or forcing to damage motor bearings.
- No wheel puller needed to get the sheave off.
- No set screws to mar or score the shaft.
- No wobble or backlash. "Magic-Grip"

sheaves lock to shaft with shrunk-on grip.

HOW DOES IT WORK? Sheave and bushing come completely assembled. You just slip it on the shaft — align — and tighten three screws. *That's all!* And it comes off just as easily.

Standardize on time-saving, money-saving "Magic-Grip" sheaves. They're heavy duty, precision made and finely finished — the best sheaves you can buy... the best economy in the long run. Get them through your nearest A-C dealer or office.

ALLIS-CHALMERS, MILWAUKEE 1, Wis.

A 2166

TEXROPE
.. Greatest
Name in
V-Belt Drives



"Super 7" V-BELTS
Five Types — Sizes
to suit every power
transmission job.



Texsteel, Texdrive,
"Magic-Grip"
— sheaves in a full
range of sizes,
grooves.



"Vari-Pitch"
SHEAVES
Exact variations in
speed, stationary or
motion control.



**SPEED
CHANGERS**
Speed variations up
to 375% at the turn
of a crank.



ENGINEERING
Finest V-Belt engi-
neering talent in the
world — at your call.

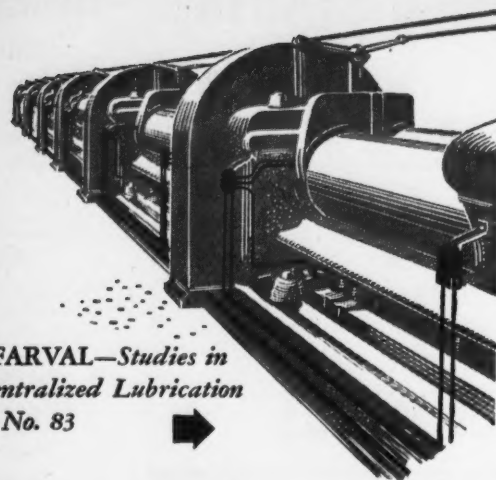
TEXROPE "Super
7" V-Belts result
from the cooperative
research of two great
companies — Allis-
Chalmers and B. F.
Goodrich. They are
sold only by A-C.

ALLIS-CHALMERS

One of the Big 3 in Electric Power Equipment — Biggest of All in Range of Industrial Products



When inquiring specify CP 413 . . . see information request blank, pgs. 2-3



**FARVAL—Studies in
Centralized Lubrication
No. 83**

Savings of \$1910 a month from \$7500 invested in Farval

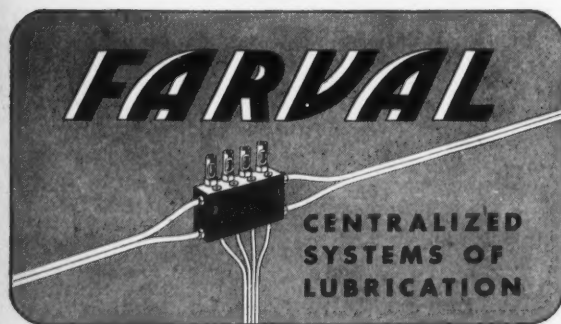
FOR 12 years, one of the large rubber companies has been enjoying the satisfaction and economy of Farval centralized lubrication on its 46 rubber mills. Formerly, bearings were lubricated with heavy cylinder oil through sight-feed cups. This work, done by hand, took eight oilers and cost \$1400 a month. Farval now does the job for \$400 a month. The eight oilers were cut to two, who also keep the Farval systems filled and operating around the clock.

The money savings in labor and lubricant average \$1910 a month. Yet gratifying as these dollar savings are, this user says the elimination of the former mill delays due to hot bearings has given the company an even larger return in increased mill output—far more valuable than all other economies combined. All this from an original investment in Farval centralized lubricating systems of less than \$7500!

Farval delivers oil or grease under pressure to a group of bearings from one central station, in exact quantities, as often as desired. Farval—the Dualine System with the Positive Piston Displacement Valve—that has but 2 Moving Parts—is Fully Adjustable—and with a Tell-tale indicator at each bearing to show the job is done.

Savings comparable to the above can be made on your equipment with Farval. Write for Bulletin 25. The Farval Corporation, 3257 East 80th St., Cleveland 4, O.

Affiliate of The Cleveland Worm & Gear Company, Industrial Worm Gearing. In Canada: Peacock Brothers Limited.



When inquiring specify CP 414—see handy form pages 2-3

Ideas

Rotating Electrical Units Built-to-Order

Special motors, generators, converters and other rotating electrical products, built to specification and order, are presented in an eight-page, illustrated catalog. Typical units are shown, selected for presentation so as to give a general, over-all picture of the scope of the manufacturer's abilities rather than specific models with definite, standard specifications. Included are AC, DC and universal motors for applications not met by standard units; dynamotors and converters; motor-generator sets; AC and DC generators; gas and diesel electric generating plants. Catalog 46-1.

ELECTRIC SPECIALTY COMPANY, Dept. CP, Stanford, Conn.

When inquiring specify CP 415—see handy form pages 2-3

★

German Techniques Superior in Syntheses of Polyvinyl Ethers

*Two such syntheses now described in a recently
issued monograph*

During the war the Germans possessed a superior technique in organic syntheses involving the use of acetylene. Two such syntheses are described by Dr. Gordon M. Kline in a monograph carrying the title — "German Manufacture of Polyvinyl Ethers."

The syntheses described are those used in the I. F. Farben plants at Ludwigshafen and Oppau. (See also P. B. 28316 and P. B. 2437 for more complete details of operation).

The preparation of monomers and polymers is described. The Ludwigshafen plant made vinyl ether monomers in a continuous process; the methyl, ethyl, and isobutyl ethers were made by reacting the corresponding alcohol with acetylene, diluted with nitrogen in a tower; the catalyst being potassium hydroxide. Ratios of reactants are stated and operating conditions, temperatures and pressures given. Yields of product as well as methods employed in separating product from reaction mixture are stated in detail. The conversion of acetylene per pass is about 60% and total yields are as follows:

Vinyl Ether	Yield Based On Acetylene	Yield Based On Alcohol
Methyl	95%	90 — 92%
Ethyl	92%	92%
Isobutyl	95%	95%

Vinyl isobutyl ether is made in the Oppau plant by batch process. The reaction vessel is a tower 23 feet high x 1.75 ft. in diameter and contains 4450 lbs. of isobutyl alcohol and 176 lbs. of sodium isobutylate as a reactor charge. Temperature is maintained at 248 degrees F. and acetylene is passed through for 8 hours against a pressure of 300 lbs. per square inch.

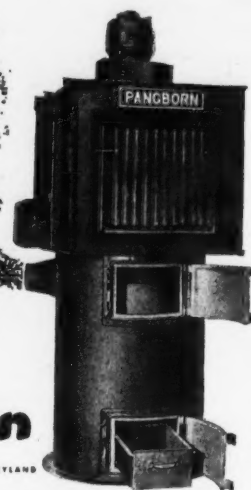
The yield is 4163 lbs. of vinyl isobutylate, containing some higher boiling ethers as impurities. After washing with water to remove alcohol, boiling with dry caustic to remove water, the batch is fractionated supplying a product which yet contains some polymer, which is removed by a second distillation. All these operations are carried out in a nitrogen atmosphere to avoid explosion hazard.

In continuous polymerization at the Oppau plant, an ingenious system of uniting the catalyst, boron trifluoride,

CLEANS OUT COSTLY DUST POCKETS



This new self-contained dust collector takes care of dust that would otherwise ruin productivity, quality and profits. It's small enough to be put in any "dust pocket"—yet has proven features of large Pangborn collectors. Minimum piping and installation expense. Pangborn's "CK" is described in Bulletin 286. Address Pangborn Corporation, Hagerstown, Maryland, world's largest manufacturer of dust control and blast cleaning equipment.



Pangborn

PANGBORN CORPORATION, HAGERSTOWN, MARYLAND

When inquiring specify CP 416—see handy form pages 2-3

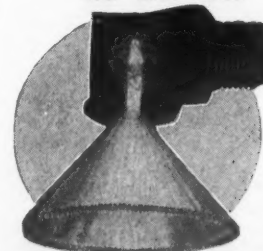
SPRAY NOZZLE INFORMATION CATALOG NO. 22



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Surprising as it may seem, spray nozzles alone are often a highly important element in the efficiency of a process or operation involving spraying. Spraying Systems can provide Spray Nozzles that offer two important advantages: (1) design based on a specialized experience in spray nozzle engineering and (2) wide range of sizes to obtain characteristics such as capacity and degree of atomization that meet specifications exactly. Write for Catalog No. 22... gives complete information.

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WHIRLJET
Spray Nozzles
made of hard rubber for
Corrosion Resistance

Spray nozzles available made of hard rubber and related materials for resistance to corrosive liquids of all types. All standard nozzle designs and sizes including pneumatic atomizing nozzles.

SPECIALISTS IN SPRAY NOZZLE DESIGN AND MANUFACTURE

When inquiring specify CP 417—see handy form pages 2-3

CHEMICAL PREVIEW

with the vinyl isobutyl ether, both in propane solution is used.

The solutions are cooled to —60 degrees F and piped to a trough, placed under a hood, water sealed, to maintain the operating temperature at 250 m. m. Polymerization occurs as the two solutions mix, the propane vaporizes keeping the temperature low and an endless belt removes the polymerized ether as rapidly as it is formed. This, together with use of nitrogen during the processing of the vinyl ether, seems to be novel. (Dr. Gordon M. Kline, Chief, Plastics Section, National Bureau of Standards, Washington, D. C.)

Fluorimeter Short-Cuts Analysis Of Food And Drugs

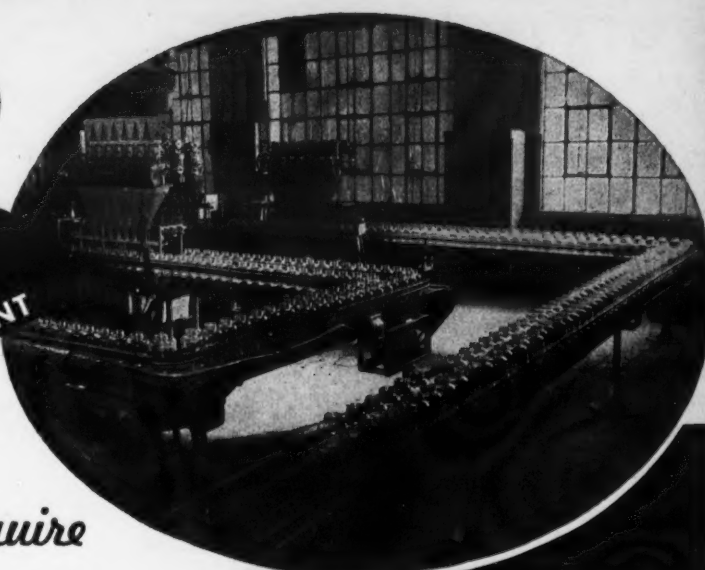
Instrument reaches out to surprisingly small magnitudes; will facilitate the study of nutrition

An improved electronic instrument, a fluorimeter, can detect as little as one millionth of a gram of certain compounds. With the fluorimeter scientists can complete nutritional experiments in a few minutes that formerly required months. It is believed that the instrument will find wide use in chemical laboratories, aiding research men in the study of vital processes as affected by food and vitamin intake and assisting in the standardization of drug products and in the control and quality of food production. The fluorimeter is extremely valuable in vitamin assay work. It reaches out to astonishingly small magnitudes, and will facilitate the study of nutrition. In describing the manner in which the fluorimeter operates, Dr. Theodore T. Friedemann, associate professor of physiology in Northwestern's Medical School explains that all compounds in nature absorb light. Some, such as vitamins, emit light in higher wave lengths. This light, called fluorescence, invisible to the naked eye in the quantities measured, is readily detected with the instrument.

Computations of fluorescence afford determinations of the quantity of compound from which the glow emanates. Measurements thus derived indicate, in their turn, the amount of vitamin, such as thiamine, in the tissue or solution from which the sample was taken. Thus chemists can determine the quantity of a vitamin in a food or, in the case of a patient, in vitamin-deficient tissue. The sensitivity of the fluorimeter may be described by this example: One 5-grain quinine tablet is dissolved in 15,000 cubic feet of water. A fractional amount of this solution is poured in a test tube, inserted in the fluorimeter, and subjected to light. From the reading on a dial, the original amount of quinine in the water may be computed. A solution derived from blood, urine, tissue may be computed in the same manner. The superiority of the new fluorimeter over previously available instruments lies in its sensitivity, its stability, and freedom from zero drift. The greater sensitivity has many advantages. One is that small biopsy samples, such as tissues or bone marrow, which previously could be analyzed only by fermentation methods, are now analyzed by the machine. Special construction of the amplifier and compensatory circuits in the instrument largely eliminate the tendency toward drift from a stable zero point of computation, a fault sometimes encountered at high electronic amplifications is some other devices. The device sidesteps time-taking experiments with laboratory animals. The instrument is said to have a sensitivity permitting it to measure accurately 1,000th of a microgram. The new fluorimeter was developed by Dr. Friedemann with the cooperation of George S. Liebeck, an American Telephone & Telegraph Co. engineer.

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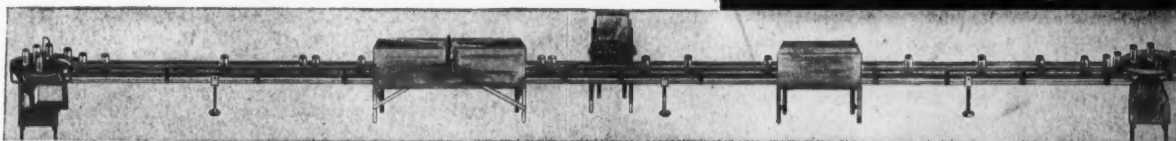
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A conveying unit built specifically for packing and conveying Pickles, Olives, Sauerkraut, and similar food products from start to finish.

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—When inquiring specify CP 418 . . . see information request blank, pgs. 2-3—

ARMSTRONG

Unit Trapping*

**\$250 SAVED
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TIME 75%**
—Chicago

**95% LESS
MAINTENANCE**
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—Still Pays BIG DIVIDENDS!

ARMSTRONG long ago made it practical and profitable to use UNIT TRAPPING* by developing:

1. A trap that does not require attention.
2. Small traps with big capacity.
3. Moderately priced traps.
4. Scientific data on how to use traps.

TODAY, ENGINEERS EVERYWHERE KNOW THAT AN INDIVIDUAL TRAP SHOULD BE USED ON EACH DRAIN LINE, YET THERE ARE STILL NUMEROUS PLACES WHERE OLD-FASHIONED TRAPPING IS COSTING PLANTS MONEY EVERY DAY!

It will pay such plants to give "trap modernization" top priority in postwar planning. Most jobs require only small expenditures and little labor, yet they pay big dividends. Ask for recommendations. ARMSTRONG MACHINE WORKS, 880 Maple St., Three Rivers, Mich.



***ARMSTRONG UNIT TRAPPING**

WHAT? It is systematic planning of trapping to provide an individual trap of correct size and type for each separate steam condensing space.

WHY? Prevents short-circuiting, air locking, water pockets, sluggish drainage. Purges both air and condensate.

WHERE? Every place where steam is used.

WHEN? The sooner the better.

HOW? See your local Armstrong representative, or write.

ARMSTRONG Inverted Bucket STEAM TRAPS
Over a Million in Use

When inquiring specify CP 419 — see handy form pages 2-3

Ideas

Precipitators Remove Dust, Fly Ash, Tar, Acid Mists, Catalysts

Applications in chemical, refractory, steel, oil and manufactured gas industries

Precipitators which will remove either solid or liquid particles from plant discharge gases are made available to industry by Koppers Co., Inc., Koppers Building, Pittsburgh, Pa. Called the Koppers-Elex Electrostatic Precipitator, the equipment is designed to remove boiler fly ash, tar, acid mists, soda ash, fluorides, catalysts, dust or valuable by-products. Exclusive manufacturing and sales license right for North America for this apparatus, which is of Swiss invention, have been acquired by the company.

Applications of the equipment are especially practical in meeting requirement of plants in areas where smoke control ordinances are in force or where there is a trend toward tightening smoke abatement regulations. Following are applications in which these precipitators have been successful: Power: — boiler fly ash and gas producer tar; manufactured gas: — tar removal from coke oven, producer, and carburetted water gases; steel: — cleaning gas from blast furnaces, gas producers, and coke ovens; cement and gypsum: — removal and/or recovery from rotary and vertical kilns and calcining kettles; sulphuric acid: — removal of acid mists; paper and pulp plants: — recovery of soda ash from black liquor burning; aluminum plants: — removal of harmful suspensions such as fluorides, and recovery of valuable products from rotary kiln and electric furnace operations; metallurgical plants: — recovery from reverberatory, electric, and roasting furnace gases. Ceramic, refractory, abrasive, foundry and fertilizer manufacturers: — nuisance elimination and protection of equipment and employees; chemical and electro-chemical plants: — drying furnaces for potassium carbonate and phosphate; oil refineries: — recovery of catalysts; general: — dust from mixers, dryers, conveyors, grinding mills, elevators, crushers, and from the air.

*

Spray Insulation of Corrugated Asbestos Cement

Applied by special machines to corrugated asbestos walls, it provides sound reduction in addition to insulating properties

A recent development in the building materials field embodies the application of asbestos fibre by spray on to corrugated asbestos cement wall and roof structures for the purpose of thermal insulation. The advantages of corrugated asbestos cement board are well known but the insulation of this material with conventional insulating board presents the great problem of air leakage through joints and application holes. Several one-story manufacturing buildings have been built using "Fibrespray" insulation on corrugated asbestos-cement side walls. The space between the glass block windows and the insulated roof (approximately 5 feet) consists of corrugated asbestos cement board with "Fibrespray" insulation. For these buildings "Fibrespray" 1 3/4" on the crest and 2 3/4" on the trough and weighing approximately 3 pounds per square foot was used. Added to the corrugated-asbestos-cement board the combination was equivalent in insulation value to a

WANTED

New Ideas

and Products

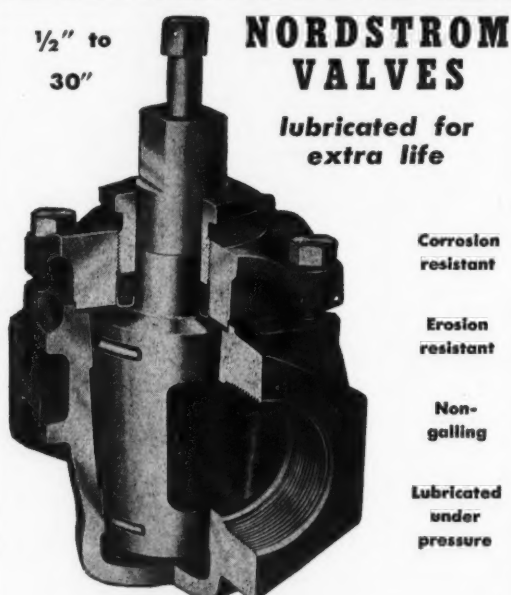
that can be developed and have potential marketing possibilities. Our client, a reputable manufacturer of chemical specialties with complete plant facilities, will assume full responsibility in connection with the manufacture, merchandising and advertising of the new idea or product with remuneration to the inventor on a royalty or other equitable basis. Give complete details in your first letter and interview with our client will be arranged. Complete confidence respected.

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Adv. Agency

Park Square Bldg., Boston, Mass.

When inquiring specify CP 420 — see handy form pages 2-3



1/2" to 30"

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- Corrosion resistant
- Erosion resistant
- Non-galling
- Lubricated under pressure

Ask for descriptive Bulletin
NORDSTROM VALVE DIVISION
Rockwell Manufacturing Company

400 N. Lexington Ave.
Pittsburgh 8, Pa.



Sales offices in principal cities

When inquiring specify CP 421 — see handy form pages 2-3

13" masonry wall, complete with furring and plaster. Being completely flexible in its application and treatment, the thickness of "Fibrespray" can be tailored to the job. Monolithic construction allows no open joints for air circulation. "Fibrespray" applied to walls or ceilings acts as barrier against flames and possesses acoustical properties.

The application of "Fibrespray" is made by men thoroughly trained for this type of work. ("Fibrespray" is manufactured by Acoustics, Inc., Commercial Trust Bldg., Philadelphia 2, Pa.) Machines have been especially developed for this work. The processed fibre passes down the machine hopper through a fan, which fluffs it up and sends it through a hose. At the point of discharge it is met by a liquid spray which combines with the open fibres in the air, so that they are dampened just as they strike the surface to which they are applied. Through a combination of spraying and tamping, the material is built up in layers until the desired thickness is reached. (Summarized from Asbestos, Inquirer Bldg., Philadelphia, Pa.)

★

Mold Bran Boosts Alcohol Yield From Grain 6000 Gals. a Day

2000 lbs. replace 7200 lbs. of malt

Increased alcohol yield in the fermentation of grains is reported by users substituting mold bran for malt to convert starch to sugar. Most economical saccharifying agent, however, was found to be a combination of the two substances. Large-scale tests at the Defense Plant Corporation alcohol plant at Omaha produced 6000 gals. more alcohol per day, using 2000 lbs. of mold bran in the yeast culture mash instead of 7200 lbs. of malt normally used. A commercial plant for producing the new saccharifier is operating at Eagle Grove, Ia. (From Aminco Laboratory News, publication of American Instrument Company, Silver Spring, Md.)

★

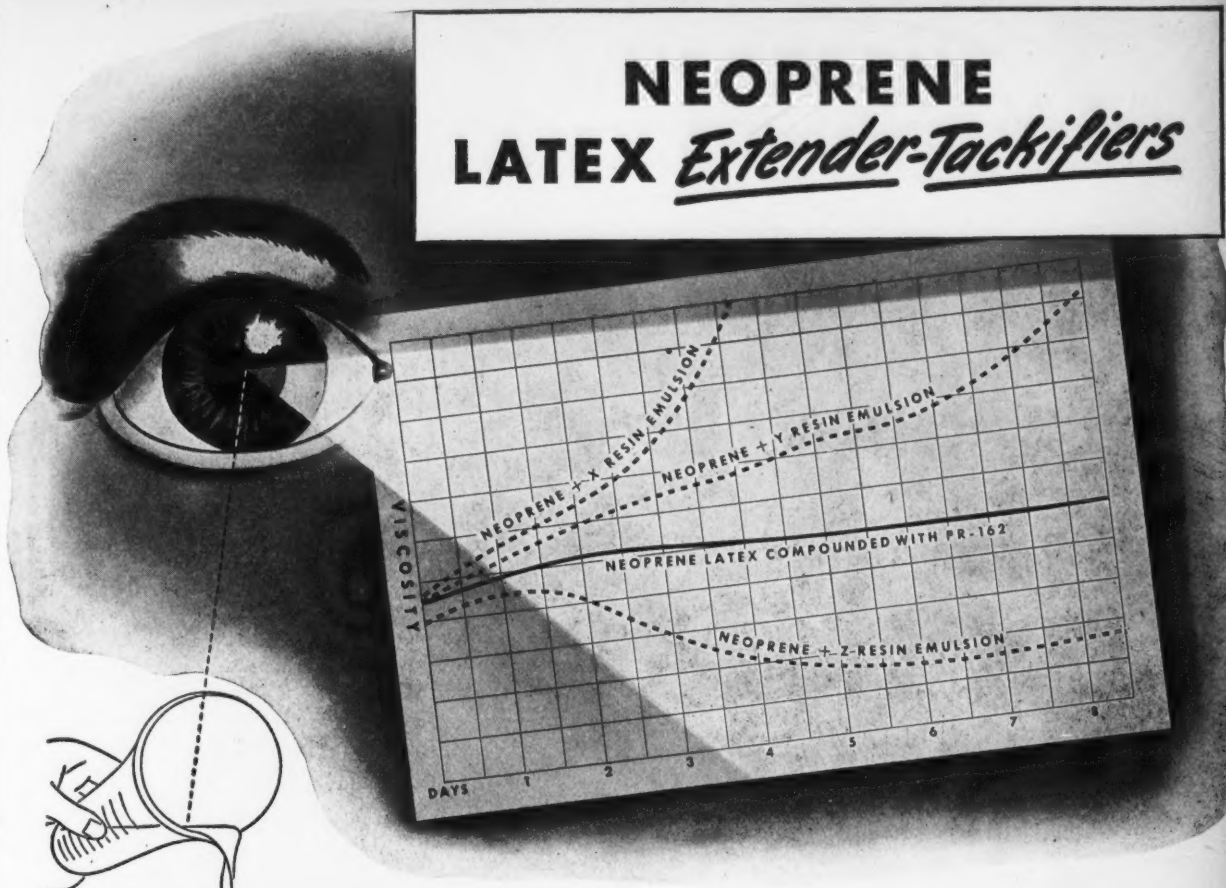
Laboratory, Production Testing Units Simulate Altitudes, Climates

Laboratory and production testing machines which simulate altitude, sub-zero, cold, relative humidity and vacuum conditions are the subject of a series of illustrated data folders. Typical folder describes Utility Units for fast, dependable production testing between plus 158° and minus 90° F. Includes photograph and diagrammatic drawing of compact refrigeration unit, 16 cu. ft. capacity, with specifications, descriptive text. Available in three models, unit consists of cylindrical working space with full opening door, also inspection window at rear of cabinet. Electric light illuminates interior, but is externally controlled. Standard, gray baked enamel exteriors protect from deterioration. Manufacturer's line includes models for biological lab work and production of serums, virus and recently developed medical preparations, also for industrial testing and research. Engineers, plant managers and production men wishing to obtain these bulletins, write for them.

BOWSER, Inc., REFRIGERATION DIVISION, Dept. CP, Terryville, Conn.

When inquiring specify CP 422 — see handy form pages 2-3

FEBRUARY, 1947



FACTS ABOUT PR-162

1. Is a stabilized emulsion of a special modified resin, of uniform and constant viscosity, which may be freely diluted with water (color of film when water has evaporated is clear, light amber).
2. Is ideal for extending and tackifying Neoprene Latex types 571, 572, and 571 concentrated (Also may be used with GR-S Type 3 or natural latex).
3. Produces strong Neoprene Latex adhesives possessing building tack and pressure-sensitivity (dry tack) from a few hours up to 4 or 5 days, as desired.
4. Resultant mixes are mechanically stable: may be brushed on or will run in most machines without coagulation (In machines where foaming usually is a problem, suitable anti-foams can be supplied on request).
5. Where permanence is required, proper treatment with anti-oxidants will result in excellent ageing in service and under accelerated ageing conditions (Suitable anti-oxidants can be supplied upon request).
6. Formulations of Neoprene Latex and PR-162 can be compounded in your own equipment or UBS will compound and ship the formulated adhesive to you.

TESTS SHOW UBS FORMULATION PR-162 GIVES MORE UNIFORM AND CONSTANT VISCOSITY

As the above graph illustrates, many Extender-Tackifier dispersions, when compounded with Neoprene Latex, show unstable viscosity tendencies as compared with UBS formulation PR-162. Users find the more uniform and constant viscosity of PR-162 an extremely important advantage in compounding Neoprene Latices.

The product of many years of practical experience with Neoprene, PR-162 is an original development of the UBS Laboratories. Write today for complete Data Sheet. Address your inquiry to the Union Bay State Chemical Company, Rubber Chemicals Division, 50 Harvard Street, Cambridge 42, Massachusetts.

For masking the basic odor of Neoprene Latex, we suggest using UBS Masking Perfume—Formula D6.



Serving Industry with Creative Chemistry

UNION BAY STATE
Chemical Company

When inquiring specify CP 423 . . . see information request blank, pgs. 2-3

PREMIER

These Products Are
Part of the Proof



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Paper Coatings



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Pharmaceuticals



Textile Finishes



Rayon



Waxes and Polishes



Cosmetics

— better products more profitably processed the COLLOID MILL with PROVEN VERSATILITY

Dispersing solids in liquids or liquids in liquids, Premier insures more finely divided colloidal suspensions and promotes immediate chemical reaction.

Disintegrating solid particles or the fibre and cellulose in animal or vegetable tissue — instantly exposing these particles to the wetting or extractive action of the suspending liquid.

Emulsifying — achieving non-separating emulsions of all viscosities.

Homogenizing — assuring superior homogenized products by compelling uniform distribution of the dispersed phase throughout the mix.

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402 Genesee St., Geneva, N. Y.

SEND DESCRIPTIVE CATALOG

NAME _____ TITLE _____
COMPANY _____
ADDRESS _____
FLUID _____

When inquiring specify CP 424 — see handy form pages 2-3



NEW LITERATURE ★

The following literature has been issued recently by manufacturers of the products discussed and is available to chemical process manufacturing executives on request. Address requests to the publishers by using handy request form, pages 2-3, or write to the manufacturers direct.

Proper Insulation "Pays off" in 8 Mos. for Coal, 5 1/2 Mos. for Oil, 4 Mos. for Gas

Are "fuel robbers" stealing heat and power from your plant? Nine case histories in a fact-packed, 20-page manual concerning control of industrial heat and power losses relate, with statistics, how one hot storage tank for process work can waste 88 tons of coal per year unless properly insulated; how bare surface heat losses from driers can be reduced as much as 94%, saving up to \$2,621 per year in fuel costs; how insulation of pipes can effect annual fuel economies as high as \$6.68 per lineal foot. Advice of this text: "If it's too hot to touch, it needs insulation." Calculations are shown to prove that investments in insulation pay off in fuel savings in an average of about 8 months for coal, 5-1/2 months for oil, 4 months for gas; and that marginal cases may require slightly more than a year to defray investment, with exceptional installations paying for themselves in less than a month. Specific examples covered include boiler shells, settings and drum heads, feed water heaters, ducts, flanged joints. Each case is tabulated to show annual savings, also time required to pay off insulation cost in fuel savings for coal, oil or gas. Operating conditions are fully described, including bare heat and insulated heat losses, savings in Btu's. and conversion to fuel savings, with appropriate formulas. Turning to the table covering dollar savings per foot of piping of various sizes, for example, the process engineer or power man can divide this figure into a contractor's estimate of insulating cost and ascertain length of time required to pay for the installation. Text notes the case of a plant with insulated piping and exposed flanges, due to a false impression that heat loss from flanges were negligible. Correction of this condition is said to have resulted in worthwhile heat savings plus a reduction in accidents, subsequent medical expense and interrupted production. Includes descriptions, illustrations of various forms of mineral wool insulation, also definitions, conditions and formulae for determining heat-loss economies on many types of equipment. A practical "Heat Loss Estimate Sheet" is included, with complete instructions and necessary tables for its use in any given situation. Write for this literature, entitled, "Control of Industrial Heat and Power Losses."

INDUSTRIAL MINERAL WOOL INSTITUTE, Dept. CP, 441 Lexington Ave., New York 17, N. Y.

When inquiring specify CP 425 — see handy form pages 2-3

Waterproof, Solvent-Resistant Resin Offers 400% Elongation, High Tensile Strength

Technical data concerning Saran F-120, a resin with unusual moisture and corrosion resistance, is contained in this 16-page, file-tabbed brochure. Contains eight tables, one chart, nine operational photographs plus valuable information concerning applications, characteristics, etc. Forward describes this resin as forming very dense, impervious coatings, completely waterproof and "more moisture-vapor-proof than any other organic coating." Manufacturer claims it more closely approximates metal

foil, in this respect, than other commercially available soluble synthetic resins. Highly resistant to solvents, oils, greases, acids and alkalis; will not support combustion; odorless, tasteless and non-toxic; varying flexibility and hardness. Prepared plasticized compositions have 400% elongation, remarkable abrasion resistance and high tensile strength. Suggested applications include packaging, lacquer, corrosion-resistant paint, artificial leather, electroplating, adhesives, textiles and leathers. A copolymer of vinylidene chloride and acrylonitrile. Contents of text cover four viscosity types, tabulated as to range and properties; solvents, with tabulations showing maximum concentration of diluents which can be used with methyl ethyl ketone; plasticizers, both solvent and non-solvent; resins, with tabulations on compatibility; pigments and uses. Additional tables cover soluble dyes and suggested pigments for use in Saran resin finishes. Typical illustrations show cobwebbing of a taped machine with Saran F-120 lacquer, and a completed package with Saran Latex topcoat, for extended storage; knife coating Saran F-120 resin dope; roller coating Saran F-120 Lacquer on paper, and heat sealing test bags of Saran F-120 Resin coated paper on a belt sealer. A key to suppliers is included. To obtain this literature, write for booklet entitled, "Saran F-120 Resin."

THE DOW CHEMICAL COMPANY, Dept. CP, Midland, Mich.

When inquiring specify CP 426 — see handy form pages 2-3

★

Mass-Produce Permanent Steel Buildings in Flexible, Standardized Units

File-size, 32-page booklet describes steel buildings made from standardized, mass-produced parts. Three structural types for all industries: self-supporting, rigid frame, and mill-type. These are illustrated and described. Many types are shown, from garages and portable buildings to warehouses and large industrial units. All details of construction, including eave struts, ridge caps, sill angles and deep-rib wall sheets, are fully illustrated and described with both photographs and diagrams. Units are flexible in layout and construction, designed for change or later growth. One photograph shows 15 men standing on a typical 20-gauge, deep-rib wall sheet which has been layed across two saw horses, relates that an ordinary corrugated sheet, under the same conditions, would not support weight of a single man. Features of the sheets are described. Their strength permits use of the skin-stress principle of construction, and in buildings up to 24' in span, usually eliminates need for supporting structural members. Laps form weather-tight joints. Sheets nest perfectly for shipment. Galvanized, they are also available in aluminum alloy, weighing one-fourth as much as steel; lead-coated for jobs where sulphur fumes are present (text relates that one such installation, after being replaced three times in 10 years with ordinary steel sheeting, has been standing 15 years without repair); also asphalt protected sheets for extremely acid or corrosive conditions. Provisions for insulation are discussed, also accessories such as stair-

CHEMICAL PREVIEW

New Literature

ways, walkways, industrial fence, roof ventilators, etc. Construction in connection with masonry is shown, as well as many typical, finished installations. A worthwhile text for anyone contemplating industrial building of any kind. Write for Bulletin B-46.

INTERNATIONAL DERRICK AND EQUIPMENT CO., Dept. CP, Columbus, O.

When inquiring specify CP 427 — see handy form pages 2-3

★

Digest-Type Bulletin Covers Chemical Stoneware Equipment

Those who "read and run" will appreciate this terse, 8-page digest of corrosion-resistant parts and equipment for the process industries. Brief descriptive paragraphs, amplified by cut-away photographs and a table of specifications highlight outstanding features of each item, listing bulletin number of manufacturer's literature containing additional details. Material thus covered includes stoneware towers, filters, tanks, heat transfer coils, pumps and acid elevators for handling acids, other corrosives. Chemical stoneware, including pipe, spigots, tees, valves and elbows, is described. Text outlines processes in which chemical stoneware is used for handling corrosive materials such as hydrochloric and nitric acids, where mechanical strength and thermal shock are factors. Various packing tower rings are evaluated according to absorption coefficient. Methods of packing tower construction are described and illustrated. Uses of special chemical porcelains for pipes, fittings, porous diaphragms and tanks are revealed. Write for Bulletin CHE-RI.

GENERAL CERAMICS AND STEATITE CORPORATION, CHEMICAL EQUIPMENT DIVISION, Dept. CP, Keasbey, N. J.

When inquiring specify CP 428 — see handy form pages 2-3

★

"Package Unit" Demineralizers Cut Distillation Costs, Plug in Any 110-v., 60-cycle Source

A line of four "package unit" demineralizers for producing small amounts of water comparable in purity to distilled, yet at a small fraction of distillation costs, is announced in a four-page, letter-size folder. These are complete in themselves, requiring only ordinary piping and electrical connections to complete your installation. Designated by reaction tank diameters, in inches, as CDM-12, 18, 24 and 36. Text includes photograph and descriptive matter, data concerning operation and controls, a blueprint, tabulated dimensions, also detailed descriptions of reaction tanks, chemical tanks and piping. A blueprint, tabular dimensions and descriptive data also cover Model CDC Decarbonators, used to reduce to low concentrations amounts of carbon dioxide where present in demineralized water. Demineralizers are built so that all steps may be performed, all results observed, from a position in front of panel. Chemical tanks are also charged from this position, permitting location of unit against wall or in a corner. All control valves and instruments located at eye level on panel. Various reaction materials are applicable to particular condition, and those best fitting raw water and effluent requirements are used. Units plug-in from any convenient 110-volt, 60-cycle source. To obtain this literature, write for Publication 4266.

COCHRANE CORPORATION, Dept. CP, 17th St. & Allegheny Ave., Philadelphia 32, Pa.

When inquiring specify CP 429 — see handy form pages 2-3

FEBRUARY, 1947



LO-VEYORS

Lo-Veyor Handles 50 Tons of Broken Glass Per Hour In Large Pennsylvania Plant

The installation detailed above covers an installation of an Ajax Lo-Veyor 40 ft. 4½" long for conveying broken glass from a crusher to an elevator. Capacity of the Lo-Veyor is 50 tons per hour, and it operates under difficult abrasive conditions encountered in handling cullet.

This installation is an integrated part of processing operations and is saving space, operating and maintenance costs for one of America's foremost glass manufacturers.

It is typical of how Ajax Lo-Veyors are being used with outstanding success by many of America's leading manufacturers.

Write giving an outline of your specific requirements.

Ajax Flexible Coupling Co. Inc.

Conveyor and Screen Division

Westfield, N. Y.

The Ajax Lo-Veyor is a vibrating type of conveyor consisting of an open or enclosed pan or tube, a V-shaped trough, a screen or other type carrier driven by a reciprocating drive. Pan or tube can be made airtight to prevent contamination or explosion in process operations.

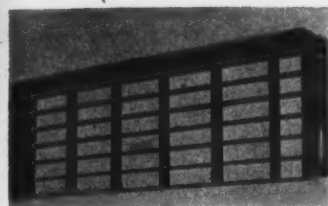
Drive mechanism is the Ajax-Shaler Shaker, a self-contained, enclosed motor driven drive unit consisting of 2 revolving weights in automatic balance.

Conveyor pan and drive float on rubber mounted springs. Conveyor is simple to install . . . requires little head room (averaging less than 18") . . . can be set on floor, in a pit, on wall brackets or suspended from ceiling.

10 years engineering and field experience in a wide range of industries will aid you in reducing material handling costs.

When inquiring specify CP 430 . . . see information request blank, pgs. 2-3

Nosing Bar has Dual Advantages



on **MITCO SHUR-SITE TREADS**

Here's a patented, double-value feature of Hendrick Mitco Shur-Site Treads. The heavy, flanged nosing bar makes each step distinctly visible, for accident prevention, and it also provides additional strength at the point of heaviest loading. Shur-Site treads have all the other Mitco constructional advantages, including non-slipping, non-clogging surfaces.

Write for full information on Mitco Shur-Site Treads, Mitco Open Steel Flooring and Mitco Armorgrids.



Perforated Metals
Perforated Metal Screens
Architectural Grilles
Mitco Open Steel Flooring,
"Shur-Site" Treads and
Armorgrids

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32 DUNDAFF STREET, CARBONDALE, PA.
Sales Offices in Principal Cities

When inquiring specify CP 436 — see handy form pages 2-3

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HOIST TO FIT
YOUR NEEDS**

Send for catalog
today, specifying
type of hoist in
which you are
interested.

**OVERHEAD
COMES DOWN—
PRODUCTION
GOES UP**

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YALE

**MIDGET KING
ELECTRIC HOIST**

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ELECTRIC INDUSTRIAL TRUCKS • HAND LIFT TRUCKS • KRON DIAL SCALES

When inquiring specify CP 437 — see handy form pages 2-3

FEBRUARY, 1947

New Literature

Barometric Condensers Provide Maximum Condensation Plus Minimum Pressure Drop

Literature describes counter-current barometric condensers, including advantages, operation and typical installations, also tabulates standard sizes. Labelled diagrams accompanying text illustrate application of condenser to: (1) a double-effect evaporator used in concentrating milk; (2) three-stage, high vacuum rotary dryer for drying salt and other heat-sensitive substances; (3) installation for refining, bleaching and deodorizing vegetable oils; (4) battery of grain cookers arranged for high and low pressure heating and vacuum cooling of the mash in first stages; (5) crystallizer using high vacuum cooling system for crystallizing saturated solutions; (6) batch rotary vacuum dryer-reactor-dissolver. Text explains that this condenser is designed primarily for operations handling excessive quantities of incondensable vapors in conjunction with normal amounts of condensibles. Proportioned for maximum condensation with minimum pressure drop. High economy, low initial cost, built so that all parts are easily accessible. Write for Bulletin CC-44. A similar bulletin, MJ-44, describes multi-jet barometric condensers.

ACME COPPERSMITHING & MACHINE
COMPANY, Dept. CP, Orelana, Pa.

When inquiring specify CP 438
— see handy form pages 2-3

One-Piece Cast Heating Sections are Non-Electrolytic

Corrosion due to construction with dissimilar metals is a cause of frequent failure in unit heaters, according to a 12-page bulletin issued by manufacturer. Bulletin describes one-piece cast heating sections which are built of similar metals throughout, many of them in continuous operation for 16 years. Withstand steam pressures to 250 lbs., also high corrosive atmospheres. Contains photos of actual installations, graphs showing "aimed" heat principal as utilized by installation at various heights, five pages of tabulated specifications for different models, cross-sectional diagrams of complete unit and diagrams illustrating hookup of supply and return piping for low pressure closed and open gravity systems, high pressure system and hot water. List of industries served includes pulp and paper mills, flour mills, foundries, distilleries, rubber and metallurgical manufacturing plants, many others. Units are built of high test cast iron. Request bulletin, "Grid Unit Heaters."

D. J. MURRAY MANUFACTURING CO.,
Dept. CP, Wausau, Wis.

When inquiring specify CP 439
— see handy form pages 2-3

FOR

All-round

PURITY ...

**BARNSTEAD
Distilled Water**

There's only one way to equal laboratory results in the plant ... and that is to match laboratory standards. BARNSTEAD Industrial Stills do just that. You can be sure of the results every time, because a Barnstead removes not only one kind of impurity but ALL kinds ... giving you a sterile distillate of the highest chemical and bacteriological purity. A Barnstead Water Still removes:

- Organic Solids
- Inorganic Solids (including silica)
- Bacteria
- Pyrogens
- Gaseous Impurities

Barnstead
STILL & STERILIZER CO. INC.

66 LANESVILLE TERRACE, FOREST HILLS, BOSTON 31, MASS.

When inquiring specify CP 440 — see handy form pages 2-3

F M C

is your best Bargain in 1947

• "FIRST" is the first to sell at lower prices.

Our guaranteed rebuilt and good used equipment provides you with strong shackles to hold down rising costs of production.

12 COLLOID MILLS

Eppembach, Charlotte, Bartlett and Snow, others.

5 VACUUM SHELF DRYERS

Buffalo and Devine

4 DOUBLE DRUM DRYERS

27" x 63", 30" x 60" with accessories.

25 COMMINUTING MACHINES

Fitzpatrick, Model "D".

30 TABLET MACHINES

Colton 3DT, Stokes Rotary D4, Stokes R,

Colton 5 1/2, Colton Rotary 10-35 Models.

4 HEAVY DUTY MIXERS

W & P 100 gal. Jacketed Double Sigma Arm.

Double Geared; also 2 9 gal.

3 ABBE MULTIPLE JAR MILLS

12 VACUUM STILL

Copper, Aluminum, Steel Jacketed or Coil Heated.

6 AUTOCLAVES, STERILIZERS, RETORTS and VULCANIZERS

STEAM JACKETED KETTLES and TANKS

Stainless, Copper, Iron and Steel. Some with Agitators.

**FIRST IS THE WORD FOR MACHINERY
FIRST MACHINERY CORP.**

157 Hudson Street, New York 13, N.Y.

When inquiring specify CP 441 — see handy form pages 2-3

NEW DESIGN GIVES EXTRA ADVANTAGES!

WALDRON "Series A" Coupling

WALFLEX SEAL

Prevents Dust Entering Couplings
Oil Leaking
Patent Applied For

Larger Maximum Bore Permits Use Of Smaller Sized Coupling to Save Space

Hubs and Cover Sleeves Constructed of HEAT TREATED FORGINGS

Send For Our New Catalog No. 57

Pressure Lubricated Bearing

Elastic Stop Nuts Insure Positive Lock

JOHN WALDRON CORP.
Main Office and Works
New Brunswick,
New Jersey
COUPLINGS

When inquiring specify CP 442 — see handy form pages 2-3

New Literature

10 to 75 gpm. High Pressure, Centrifugal Pumps Handle Liquids to 200 lbs. psi.

Informative, four-page pamphlet covers vertically split-case, multi-stage, high pressure centrifugal pumps. For general water supply, boiler feeding, ice water or brine circulation, pneumatic water systems, sprinkling, etc. Text describes equipment for handling quantities of liquids to 200 lbs. psi., and capacities from 10 to 75 gpm. Illustrations show 1 1/4", three-stage pump, also 2, 3, 4 and 5 stage NAS pumps with electric motor drives. Cross-sectional diagrams, with tabulations of approximate dimensions and weights, also charts giving performance curves of 1 1/2 x 1 1/4 NAS pumps. Though usually direct-connected to electric motors, they also may be driven by small steam turbines, gasoline engines, chain or belt drives. Said to yield a large saving in operating costs. Pamphlet fully describes construction, including casing, impellers, bearings, hydraulic balance, stuffing boxes, shaft, flexible couplings, subbases. Write for Bulletin No. B-346.

ECONOMY PUMPS, Inc., Dept. CP, Hamilton, O.

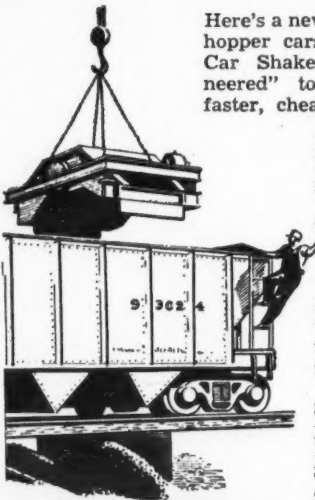
When inquiring specify CP 443 — see handy form pages 2-3

★

Vest-Pocket Text Lists Ailments, Cures for Travelling Overhead Cranes

What's wrong when the hook of an overhead travelling crane will not lower when the hoist controller is moved into lowering motion? If the crane binds on runway? Where are the lubrication points for heavy duty, roller

NEW CAR SHAKEOUT UNLOADS HOPPER CARS IN 2 MINUTES



Here's a new way to unload packed hopper cars. It's the new Robins Car Shakeout . . . "Job-Engineered" to unload hopper cars faster, cheaper, better than ever.

FASTER, because it unloads cars in minutes—not hours.

CHEAPER, because two men can do the work of six.

BETTER, because it empties cars "broom clean" without harm to either the car or the load.

Solve your unloading problems with a "Job-Engineered" Robins Car Shakeout. Write for complete details.

**ROBINS
CAR SHAKEOUTS**

When inquiring specify CP 444 — see handy form pages 2-3

**ROBINS CONVEYORS
INCORPORATED**
Passaic, New Jersey
Division of Hewitt-Robins Incorporated

ALOYCO

STAINLESS STEEL

VALVE SUCCESS

is due to

2

Primary Factors

1. Wide Selection of Corrosion-Resisting Alloys.

2. Excellence of Design and Construction.



Aloyco Gate Valve
No. 111

Aloyco Valves are made in a wide variety of corrosion-resisting alloys. It has taken us many years of specialization in the manufacture of corrosion-resisting valves exclusively, to gain the experience which enables us to recommend the ONE BEST ALLOY for any specific application. Of equal importance with the selection of the correct alloy, is the quality of design and construction of the valve. Here again our concentration on the fabricating of corrosion-resisting alloys makes Aloyco Valves distinctive for mechanical excellence. Consult us on your requirements.

Stainless Steel
VALVES and FITTINGS

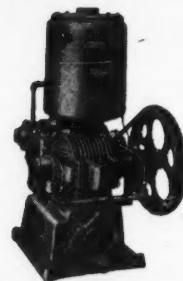
GATE VALVES • GLOBE VALVES
Y VALVES • CHECK VALVES
LEVER THROTTLE GATE VALVES
TANK VALVES
SCREWED FITTINGS
FLANGED FITTINGS
GAUGE GLASS FITTINGS

ALLOY STEEL PRODUCTS COMPANY, INC.
1302 WEST ELIZABETH AVENUE — LINDEN, NEW JERSEY

When inquiring specify CP 445 — see handy form pages 2-3

Higher, More Efficient Vacuum for These Processes

Concentration
Crystallizing
Dairing
Dehydration
Distillation
Evaporation
Filling
Filtration
Impregnation
Refining
Solvent Recovery
Testing



**IMPROVES PRODUCT
CUTS TIME AND COST**

A Beach-Russ Type RP Rotary High Vacuum Pump, operating at slow speed, gives sustained, uniformly high vacuum — in the low micron range — with the highest mechanical efficiency, in minimum pump-down time and with low power cost.

Investigate its superior performance and long life. Capacities — 15 to 750 c.f.m. wet or dry vacuum. Construction of corrosion-resistant metal, where required. Catalog No. 80.

**HIGH VACUUM
BEACH-RUSS PUMPS**
BEACH-RUSS CO. • 46 Church Street, New York 7, N. Y.

When inquiring specify CP 446 — see handy form pages 2-3

CHEMICAL PREVIEW

New Literature

bearing cranes? What are the standard crane signals? This, and much additional information, is contained in a 32-page "trouble shooter" handbook concerning overhead travelling cranes. Booklet includes tabulations on recommended diameters of wire, manila, sisal rope and chain for various weight loads together with suggested angle, in degrees, for fastening and lifting. Vest-pocket size, handily indexed for quick reference. Write for Bulletin C-28-1.

HARNISCHFEGER CORPORATION, Dept. CP, Milwaukee, Wis.

When inquiring specify CP 447 — see handy form pages 2-3

★

Offers Design Freedom, Cost Savings to Pressure Vessel Designers, Fabricators

"Connections and Openings for Pressure Vessels" is title of a four-page, letter-size, illustrated folder showing a wide range of press-forged welding necks, nozzles, manways and hand-holes. Included are all standard and many special types of connections and openings used in pressure vessel fabrication. One page is devoted to forged specialties, shows stainless steel manway collars, 20x 24" door for gas generators, shell outlet saddle, other units. Literature stresses design freedom and cost saving features. A series of three illustrations portrays production of 12 flued and curved saddles of 24" I.D. by 43" O.D., of 4" thickness, curved to 65" I.D. sweep from steel plate ASME SA-212 Grade B Firebox Quality, for two 300,000 lb. per hr. pulverized coal fired steam generating units. Write for Bulletin 4-61.

LENAPE HYDRAULIC PRESSING & FORGING COMPANY, Dept. CP, Dept. 27, Westchester, Pa.

When inquiring specify CP 448 — see handy form pages 2-3

★

248-Page Aluminum Alloy Data Book Features 106 Technical Tables

Valuable technical information on aluminum alloys and mill products is contained in this 248-page data book featuring 106 tables, separately indexed for convenience. Text discusses alloytemper and physical properties, gives detailed chemical, physical, mechanical properties of high purity aluminum, also nominal chemical compositions, typical mechanical properties, values of density of coefficients of expansion, thermal and electrical conductivity, annealing and heat-treating cycles for wrought, sand-casting, permanent-mold casting and die-casting alloys. Subsequent chapters concern various mill products, discuss manufacturing methods, alloys and tempers, identification, weight conversion data, bend radii, pressure calculations for tubing and pipe, similar information. Sections are devoted to sheet and plate, extruded shapes, forging stock, etc. A group of reference tables compares gauges, decimal equivalents, shrinkage allowance for castings, other data. A section on related specifications is arranged according to alloy designations. These are broken down into product forms, with related Federal, military, other specifications listed. Colored flags speed finding of any desired section. Wire-bound to open flat. Size, 6 x 9". Detailed table of contents. Thoroughly cross-indexed. Write for, "Reynolds Aluminum Alloys and Mill Products Data Book." Price, \$2. Send remittances direct to manufacturer.

REYNOLDS METALS COMPANY, Dept. 47, Dept. CP, 2500 S. Third St., Louisville 1, Ky.

When inquiring specify CP 449 — see handy form pages 2-3

FEBRUARY, 1947

STEEL FITTINGS and FLANGES

Low Priced FOR ALL INDUSTRY

Fittings and Flanges— $\frac{1}{2}$ " to 24" in size.

Pressure ratings from 150 lbs. p.s.i. to 6000 lbs. p.s.i.



Principal inventories are located in:

Cincinnati	Portland
Los Angeles	Richmond
New Orleans	San Francisco
New York	Seattle

All Flanges and Fittings are sold under existing priority regulations. VETERANS OF WORLD WAR II are invited to be certified at the War Assets Administration Certifying Office serving their area, and then to purchase the materials offered herein.

EXPORTERS: Your business is solicited. If sales are conducted at various levels, you will be considered as a wholesaler. Any inquiries regarding export control should be referred to Office of International Trade, Department of Commerce, Washington, D. C.

WAA has a huge inventory of Steel Pipe Fittings and Flanges which *must be sold*. This material must be sold quickly—it is priced low—considerably under current market prices. Don't let these distress prices lead you into believing this is distress merchandise. Actually, these Fittings and Flanges (and Valves, too) were made to strict specifications and are characteristic of the high standards common to American industry. WAA has made it easy to buy—deliveries are quick—your costs are at a minimum. Visit, phone or write your nearest WAA Regional Office today to secure pertinent information concerning your requirements.

WAR ASSETS ADMINISTRATION

GOVERNMENT OWNED SURPLUS

Offices located at: Atlanta • Birmingham • Boston • Charlotte • Chicago • Cincinnati • Cleveland • Dallas • Denver • Detroit • Fort Worth • Helena • Houston • Jacksonville • Kansas City, Mo. • Little Rock

Los Angeles • Louisville • Minneapolis • Nashville • New Orleans • New York • Omaha • Philadelphia • Portland, Ore. • Richmond • St. Louis • Salt Lake City • San Antonio • San Francisco • Seattle • Spokane • Tulsa

827-2

When inquiring specify CP 450 . . . see information request blank, pgs. 2-3

Hotpack

DRYING OVENS

HIGH
TEMPERATURE

MEET YOUR
Requirements For

- **TEMPERATURE FLEXIBILITY**—adjustable from 200° to 500° F.
- **TEMPERATURE CONSTANCY** — thermostatically controlled — plus or minus 2°.
- **QUICK COME-UP TIME** — speedy recovery.
- **HEAVILY INSULATED TO PREVENT RADIATION** — eliminates operating discomfort.
- **ATTRACTIVENESS** — stainless steel interior, gray enamel exterior.
- **PROMPT DELIVERY** — fast service.



Three Sizes to Meet Every Requirement

Model No.	Interior Size			Exterior Size			Wattage	Price
	W.	D.	H.	W.	D.	H.		
701	12"	12"	12"	20"	20"	27"	1200	\$195.00
703	16"	16"	19"	24"	24"	35"	1600	255.00
705	24"	20"	30"	32"	28"	45"	2000	425.00

ORDER THROUGH YOUR LABORATORY SUPPLIER OR WRITE FOR CATALOG
#26 FOR DETAILED LITERATURE ON ALL HOTPACK EQUIPMENT

THE ELECTRIC *Hotpack* COMPANY, INC.
COTTMAN AVE. AT MELROSE ST. PHILADELPHIA 35, PENNSYLVANIA

When inquiring specify CP 451 . . . see information request blank, pgs. 2-3

NEED MIXERS? Try the *New Multi Mixer* Employing the Special Multiplex Paddle Principle which assures high production at low cost . . .



Designed by men with mixer "know-how", the new Multi-Mixer produces a uniformly good mix at a very low cost. High production is achieved by the unique Multiplex paddle arrangement.

Available with sealed covers and with V-belt or direct motor drives, Multi Mixers are being used by many processing plants (rubber, ceramic, chemical, alloy, test blending of powders, and others). The Multi Mixer is the answer to your quest for an inexpensive but sturdy mixer.

Write for further information

THE MULTIPLEX CONCRETE MACHINERY CO.
ELMORE, OHIO

30 to 60 cubic feet capacity. Open or closed type cover. Discharge arranged to suit conditions.

When inquiring specify CP 452 . . . see information request blank, pgs. 2-3

New Literature

Jar Mills, Rolling Machines Process all Materials, Dry or Wet

Subject: Jar mills and jar rolling machines for pulverizing, fine grinding, dispersing, mixing, extracting or blending all process materials, dry or wet. Media: 24-page, ring-punched, letter-size catalog. Fully illustrated. Lists 116 materials successfully ground or processed by these products. Describes operation, grinding media, dry and wet grinding. Advantages include processing of different batches of wet and dry materials without individual premixing. This literature covers various types of jar mills such as single or two-jar; multiple bracket 5-jar; single, double or triple frame; double or triple frame combinations; swiveled and Eureka. Eureka types, in 9 to 60 gal. capacities, more nearly approach size of pebble or ball mills, and open from the side instead of at end, being supplied with either a grate cover for dry discharge or a liquid discharge cover for wet materials. In all cases, sizes and capacities are listed in tabular form. Text also describes mill parts; porcelain, metal, pyrex glass and rubber-lined metal jars; various grinding media. Six pages are devoted to rolling machines, tumbling mills, blenders, ball and pebble mills, other processing equipment such as pulverizers, granulators and mixers. Special tumbling mills for special needs include units for operation under vacuum or pressure. Can be heated electrically or jacketed for heating and cooling. Used by US and foreign government laboratories, by chemical, food, drug, paint, lacquer and ink plants, in paper pulp testing, for latex dispersions, ceramic materials, coal, coke, metallurgical, powdered metals, plastics, rubber and other materials, for samples or compounds. To obtain this literature, request Catalog No. 63.

ABBE ENGINEERING CO., Dept. CP, 50 Church St., New York 7, N. Y.

When inquiring specify CP 453 — see handy form pages 2-3

★

Electrical Handbook Covers Motors, Motor Control, V-Belt Drives, Similar Data

Briefed, letter-size, 16-page handbook concerns electrical products suitable for a wide variety of industrial uses. Profusely illustrated. Eight classifications of electrical equipment from 1/2 to 5000 hp. AC and DC motors to electronic heaters. For quick reference, characteristics of 1/2 to 75 hp. motors are tabulated, and construction and application of many types of motors are described. Regarding manufacturer's complete line of motor control equipment, data covers type, maximum hp., volts, description of motor controls. Tabular data relative to complete line of multiple V-belt drives of constant and variable speeds offers "at-a-glance" information concerning type sheave, number of grooves, belt sizes and hp. best suited to particular needs. Complete line of low and high voltage transformers, switchboards, switchgear and circuit breakers, equipment for power generation and centrifugal pumps, also water conditioning chemicals and equipment, graphically described. Includes handy tabulation of metalclad vertical lift switchgear data, also information on welding equipment and arc welding accessories. Manufacturer is one of "the big three" in manufacture of electric power equipment. Write for Handbook B6452.

ALLIS CHALMERS MFG. CO., 655, Dept. CP, Milwaukee 1, Wis.

When inquiring specify CP 454 — see handy form pages 2-3

CHEMICAL PREVIEW

FILTERFAB FILTER MEDIUMS

For all processing and refining industries.

Write us your problems. Our many years of experience with the various filtering industries is at your service.

Finished Filter Mediums, ready to install on high pressure plate and frame presses — preshrunk and made to your pattern — assuring accurate fit.

PROMPT DELIVERIES

Write us for prices and further information

Filter Fabrics, 1257 W. 4th St.,
Cleveland 13, Ohio



When inquiring specify CP 455 — see handy form pages 2-3

What is YOUR handling problem?



DETROIT HOIST & MACHINE CO.
8222 MORROW AVE., DETROIT 11, MICH.

When inquiring specify CP 456 — see handy form pages 2-3

FEBRUARY, 1947

New Literature

Industrial Goggles Raise or Lower with Nod of Head

Eye protection for every industrial need is included in an 8-page, illustrated bulletin. Items are described in detail. Covers chipper's goggles with protective lenses, chemical goggles for protection from dangerous chemical particles and splashes, open-frame Ful-Vue spectacles, spectacles with side screen and leather side shields, dust goggles, dreadnaut goggles for protection against flying particles from any direction, welders' goggles with wide choice of lens types, foundry and melters' goggles, acetate spectacles, gas goggles, wire screen goggles, specially designed goggles for workers who must wear corrective glasses. Literature features Speed-frame, a goggle mounting which eliminates troublesome hand adjustment, raising or lowering with a nod of the head; Fogpruf for quick cleaning of lenses, and a goggle cleaning cabinet containing Fogpruf and optical wiping tissues in a wall mounting, designed to encourage workers to wear goggles and keep them clean. Write for Bulletin No. CE-29.

MINE SAFETY APPLIANCES COMPANY,
Dept. CP, Braddock, Thomas & Meade Sts.,
Pittsburgh 8, Pa.

When inquiring specify CP 457
— see handy form pages 2-3

★

Alkali Cleaners Clean Ferrous Metal without Oxidizing

A four-page technical data sheet, illustrated, covers manufacturer's line of corrosion-control alkali cleaners for ferrous metal. Literature explains that this is a group of compounds designed not only to clean, but to do so without causing oxidation; that they are free-flowing materials, readily soluble in hot water. Purpose: to handle specific cleaning problems with minimum operations and equipment. Discusses types of metal cleaners, also metal cleaners for mechanical washing units and soak tanks; "conveyorizing" cleaning operation in soak tanks; governing factors in meeting cleaning cycles; concentration of solution; heat as a factor in a cleaning solution of 6 oz. per gal. concentration, with tabulated time and temperature recordings; corrosion control, oil removing and rinsing properties, hydrogen ion concentration and surface tension. Write for "Corrosion Control Alkali Cleaners for Ferrous Metal."

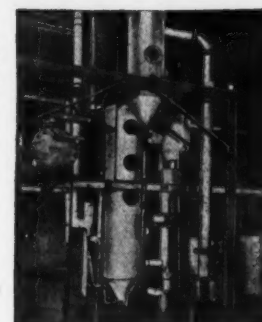
NIELCO LABORATORIES, Dept. CP, 1632
W. Lafayette, Detroit 16, Mich.

When inquiring specify CP 458
— see handy form pages 2-3

from PENICILLIN



Since the beginning of mass-produced penicillin, Nooter has been a regular source of exacting culture equipment such as these 2,500 gallon coil tanks.



Silicon bronze alloy calandria unit and flash chamber, used with cyclotron.

to ATOMIC REACTION...

NOOTER FABRICATED VESSELS PROVIDE PURITY, STRENGTH and CORROSION RESISTANCE

Processing equipment, fabricated to the most exacting specifications, is the major product of Nooter's complete facilities manned by generations of skilled metal craftsmen and supervised by fabricating engineers.

Experience and technical knowledge in the behavior of metals and their properties, indispensable to successful processing equipment, are offered by Nooter.

Solid plate, lined, and clad fabrication of all types of pure metals and alloys. A. S. M. E. code welded construction, stress relieving and X-Ray testing.

WRITE FOR YOUR COPY OF THE NEW CORROSION —
RESISTANT METAL TABLES — COMING OFF THE PRESS, SOON.



JOHN NOOTER Boiler Works Co. • 1428 S. Second St., St. Louis 4, Mo.

When inquiring specify CP 459 — see handy form pages 2-3

Guaranteed PIPE WRENCH ECONOMY



No wrench housing
repair bother or
expense with the
sturdy efficient

RIDGID

● So strong, efficient and trouble-free it's no wonder millions of users prefer it. And economical — that guarantee saves you all wrench housing expense and bother. Easy-spinning adjustment nut — in all sizes, 6" to 60". Positive-action jaws, handy pipe scale on hookjaw, comfort-grip handle. For top wrench value buy work-saver **RIDGIDS** — at your Supply House.



End pattern for
pipe in coils, against
flat surfaces.

RIDGID

WORK-SAVER PIPE TOOLS
THE RIDGE TOOL COMPANY • ELYRIA, OHIO

When inquiring specify CP 460 — see handy form pages 2-3

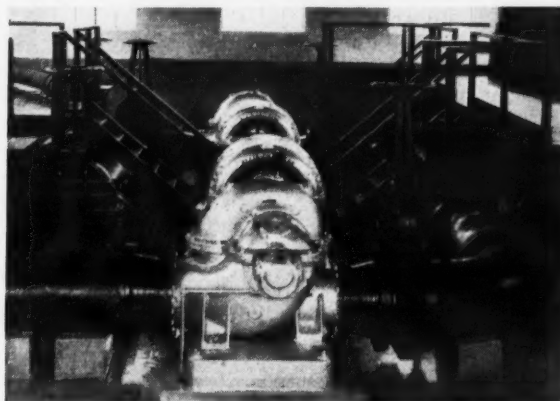
Equipment for Production

Rubber Expansion Joints Prevent Stresses And Insulate Against Vibration

*Spool types available in sizes from 2" to 78"
diameter*

USES — These joints are being used in power plants, chemical processing plants, paper and pulp mills and sewage disposal plants. Some of the equipment on which they are applied includes: air ducts, blower lines, brine tanks, chilled water lines, circulating water lines to condensers, dry vacuum lines, hot water lines and pump suction and discharge lines.

FEATURES — Rubber expansion joints are economical, flexible connections used in pipe lines in mechanical equipment to prevent excess stresses due to expansion and



Rubber expansion joints installed at inlet and outlet flanges of a centrifugal pump.

contraction, to insulate against vibration, and to prevent the transmission of undesirable sound. Also built to take care of misalignment. Eliminates costly repairs, increases operating efficiency and extends the life of equipment thus saving many times original cost. Since there are no moving parts joints will give many years of service.

DESCRIPTION — Rubber and fabric are the chief materials used in the construction of expansion joints, and these materials are varied in characteristics depending on the specific function each material must perform when the product is in service. For example, the rubber compound used in the lining of an expansion joint has entirely different characteristics from the rubber friction which impregnates the fabric and the rubber compound from which the cover is made. Lining is made of a single piece of compounded rubber which extends through the bore and to the outside edges of the flange. Lining can be made of special compounds of natural or synthetic rubber to resist attack by acids, oils and other chemicals. Cover is formed from natural or synthetic rubber and compounded to withstand dry heat, and will retain physical properties for long periods of time. Both natural and synthetic rubber covers are coated with a special paint. This protects the rubber cover against damage from occasional contact with oil. In the case of the synthetic rubber cover, the paint serves as an added protection. Fabric is cotton duck and square woven to provide equal strength in both directions. Fabric

plies are impregnated with long-lived rubber or synthetic friction, and laminated into a unit. When bolt holes are drilled in the full faced flanges, edges of the plies thus exposed are thoroughly coated with self-vulcanizing rubber compound to seal against absorption and wicking of moisture, oils and other harmful materials. When joints are to handle acids or other substances which destroy cotton fabric, the bolt holes are lined at the factory with a rubber layer as an added protection. Complete information is contained in form M-4595 which may be secured on request.

UNITED STATES RUBBER CO., Dept. CP, 1230 Avenue of the Americas, New York 20, N. Y.

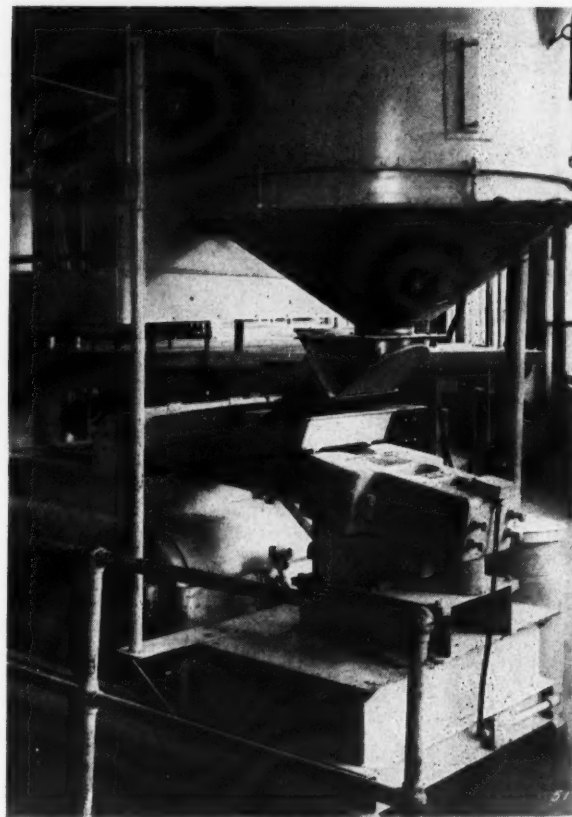
When inquiring specify CP 461 — see handy form pages 2-3

★

Feeds, Weighs, Batches And Proportions Materials Evenly

*Weight-controlled electric vibrating feeder handles
plastics, talc, activated carbon, wood flour, etc.*

USES — Constant weight feeder for continuous, accurate gravimetric feeding, weighing, batching and proportion-



Installation of unit for controlled weight feeding

ing of granular chemicals, foodstuffs and materials such as activated carbon, bauxite, explosives, iron ore, plastics, talc, wood flour, sand, etc.

FEATURES — Provides a uniform feed stream of ma-

CHEMICAL PREVIEW

Production

terial ahead of customer's packaging machines. Basic part is the weight-controlled electric vibrating feeder which delivers material from supply hopper and regulates quantity or rate of delivery. This is automatically regulated by weight-belt mechanism instead of manually, although control is purely electrical and instantaneous. Scale may be built into weight-belt or mounted in separate scale box. Scale beam is calibrated for capacity in pounds per foot of belt, actuates "electric brain" which transmits signals to control box, showing "in" and "out" of balance conditions. Control box converts signals instantly to correct electrical adjustments for vibrating feeder.

DESCRIPTION—Jeffrey-Traylor "Waytrol." A precision machine which compensates for error on either side of an exact mean, thus duplicating the theory of precision of measurement. Capacity between 125 and 400 cu. ft. of granular foodstuff, chemicals, or similar materials, per hour, weighing 34 lbs. per cu. ft. Minimum and maximum capacities per hour, based on 100 lbs. granular material, 60 to 5000 lbs. and 6,000 to 500,000 lbs., depending on type or model. Shipping weight, 1,050 to 12,000 lbs. In operation, weighbelt is in constant balance against scale setting by virtue of automatic adjustment of vibrating feeder rate in response to any off-balance condition of weighbelt. Vibrating feeder adds either more or less material to belt to maintain such condition continuously. Mechanism included in control box insures over and under periods of swing must be equal. Literature furnished on request.

THE JEFFREY MANUFACTURING COMPANY, Dept. CP, Columbus 16, Ohio.

When inquiring specify CP 462 — see handy form pages 2-3

★

Power Belt Conveyor Speeds Between-Floor Movement of Plant Goods

Built-in belt, motor, wiring and framework mean simple, instant installation

USES — Used in moving materials between floors. It will handle cartons, cases, bags or boxes. Also for converting inaccessible places into useful storage space.

FEATURES — As much as 60% savings in time and manpower can be accomplished with this type of conveyor doing the work of moving goods up and down stairs in the fashion of an escalator. A continuous flow of materials is provided from floor to floor by the use of this equipment. Inaccessible and unused places in the back room, on the next floor up, or back in the loft can be made into efficient storage places with this equipment. Installation is quick and simple and need not interfere with normal factory operations. Units are shipped with belt, motor, wiring and framework built into a self contained ready to install assembly.

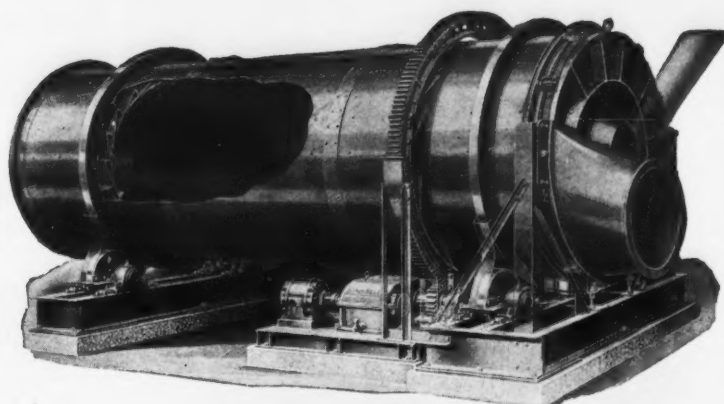
DESCRIPTION — Conveyors operate on standard available current. Accessories include: nosed over delivery section, starter and reversing switch, full length control bar, full length adjustable guard rails and support at each end of the conveyor. Powered portions of the conveyors are available in standard lengths of 10, 12, and 15 ft. and standard belt widths are 12 and 16 inches.

THE RAPIDS-STANDARD CO., INC., Dept. CP, Grand Rapids 2, Mich.

When inquiring specify CP 463 — see handy form pages 2-3

FEBRUARY, 1947

What Do You Have TO DRY?



LINK-BELT ROTO-LOUVRE DRYER

From the answer to this question Link-Belt drying and process engineers would know what problems you may be having. A little study of the types of equipment now employed and the conditions under which it operates would show whether or not you could profit by some alteration of method.

Better Equipment May Save Time, Lower Costs, Improve Your Product.

In setting up a new plant or studying an old one, it pays to give close attention to drying and cooling methods. L-B engineers are unbiased; their experience covers a wide range of products in many industries. Why not consult them, now? Following are three principal types of L-B Dryers:

ROTO-LOUVRE (top picture) This dryer and cooler is supreme where large volume, gentle handling, gradual drying and accurate control are necessary. Requires relatively little space as compared to conventional equipment. Can replace your old dryer without expensive alterations. Choice of 8 shell diameters, various lengths.

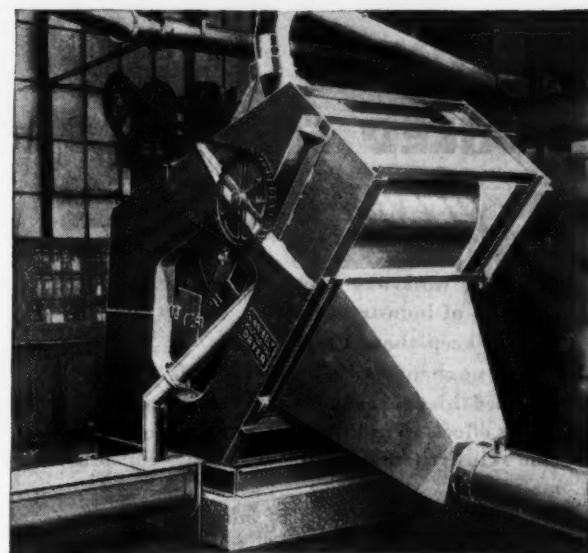
MULTI-LOUVRE (center picture) Applies principle of forcing air through a constantly mixing bed of material. The same machine can be used for both drying and cooling. The temperature of the air can be varied during the various stages of drying as desired. Steam for conditioning a material before drying can also be admitted. Requires relatively little space, is economical to operate and especially suited to material not requiring long retention periods.

"SS" (lower picture) This type is for the fast removal of surface moisture from coarse, non-absorbent materials, which are subject to forced hot air as they move along a shaker screen.

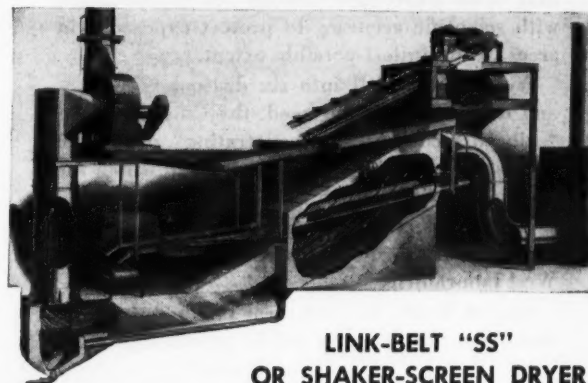
For full details address:

LINK-BELT COMPANY

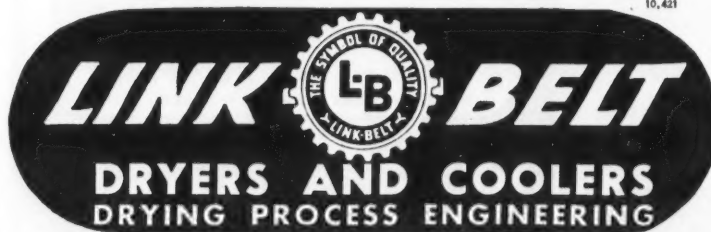
Chicago 9, Indianapolis 6, Philadelphia 40, Atlanta, Dallas 1, Minneapolis 5, San Francisco 24, Los Angeles 33, Seattle 4, Toronto 8. Offices in Principal Cities.



LINK-BELT MULTI-LOUVRE DRYER



LINK-BELT "SS" OR SHAKER-SCREEN DRYER



NOTE: The illustrations above are not made to a uniform scale. Dryers are available in several standard sizes. Your inquiry involves no obligation.

When inquiring specify CP 464 . . . see information request blank, pgs. 2-3



HOW TO PUT A MAILED FIST INTO A *VELVET* GLOVE!

Valuable, work-wise hands are the flesh, bone and skin of industry.

Help keep them busy.

Take no chances with the surface skin especially.

Guard this skin against the annoying and profit-eating effects of industrial dermatitis due to specific skin irritants, such as chemicals and other materials.

Give it a gentle glove of advance protection with West Protective Creams.

Professional medical advice has determined that West Protective Creams are compounded with scientific accuracy to protect exposed skin areas to the fullest possible extent.

West Creams fall into six distinct types . . . and depending on the need, they supply either "skin surface" or "skin-penetrating" protection against every major specific irritant to which the human skin is sensitive.

West Protective Creams comprise part of a large list of "skin safeguards" developed in the West laboratories.

One of West's 350 technical safety consultants throughout the country will be glad to help solve your dermatitis problems.



Products That Promote Sanitation

WEST Company
CLEANSING DISINFECTANTS • INSECTICIDES • NOPEX VENDING MACHINES
PAPER TOWELS • AUTOMATIC DEODORIZING APPLIANCES • LIQUID SOAPS

42-16 WEST STREET
LONG ISLAND CITY 1, N. Y.
★ BRANCHES IN PRINCIPAL CITIES OF
THE UNITED STATES AND CANADA

When inquiring specify CP 465 — see handy form pages 2-3

Production

2500-Watt AC-DC Switch is Boon to Lab, Research Workers

*Neon glow-lamp tells when current is on,
prevents bumps and burnouts*



Neon glow-lamp on heavy-duty
appliance switch

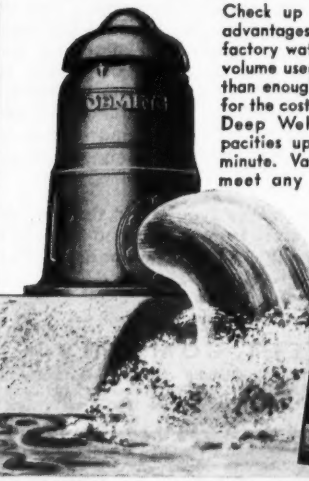
where prolonged life, savings on current and reduced fire, accident and shock hazards are important considerations.

FEATURES — Operating on electrical devices up to 2500 watts AC or DC, 125 or 250 volts, and carrying the UL listing of 20 amperes at 125 volts, the switch may be

USES — Heavy-duty appliance switch for replacement purposes and remote-control operation of dark-room apparatus or appliances in other rooms or locations. Of special value to laboratory and research workers, teachers, etc. Suggested as a safety factor in damp places, also for attachment to electrical appliances


REDUCE WATER COSTS!

Install a Deming Turbine Pump



Check up on the money-saving advantages of owning your own factory water supply. Many large volume users of water saved more than enough the first year to pay for the cost of installing a Deming Deep Well Turbine Pump. Capacities up to 3000 gallons per minute. Various types of heads meet any power requirement.

Write for Illustrated
BULLETIN 4700-8.



THE DEMING COMPANY
261 BROADWAY AVENUE • SALEM, OHIO

DEMING

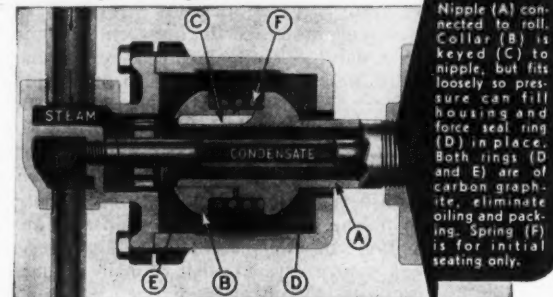
THE COMPLETE LINE
PUMPS AND WATER SYSTEMS

When inquiring specify CP 466 — see handy form pages 2-3

Help FOR YOUR STUFFING BOX PROBLEMS . . .

Getting steam or liquids into rotating machine parts used to mean a lot of trouble with stuffing boxes and steam fits. The Johnson Joint has changed all that. It's completely packless, self-oiling, self-adjusting and even self-aligning. Industry is finding new uses for it every day. Type B illustrated provides for condensate removal; other styles and sizes for all needs. Write for details.

THE JOHNSON CORPORATION
826 WOOD ST., THREE RIVERS, MICH.



Nipple (A) connected to roll. Collar (B) is keyed (C) to nipple, but fits loosely so pressure can fill housing and force seal ring (D) in place. Both rings (D and E) are of carbon graphite, eliminate oiling and packing. Spring (F) is for initial seating only.

JOHNSON Rotary Pressure JOINTS

When inquiring specify CP 467 — see handy form pages 2-3

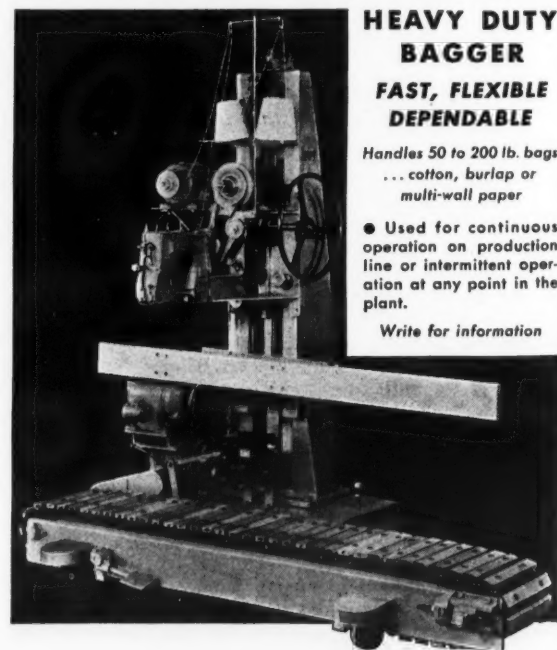
The CONSOLIDATED Model 105

**HEAVY DUTY
BAGGER**
**FAST, FLEXIBLE
DEPENDABLE**

Handles 50 to 200 lb. bags
... cotton, burlap or
multi-wall paper

● Used for continuous
operation on production
line or intermittent
operation at any point in the
plant.

Write for information



CONSOLIDATED PACKAGING MACHINERY CORP.
BUFFALO 13, N. Y.

When inquiring specify CP 468 — see handy form pages 2-3

Production

attached at any point where it is most convenient to control on-and-off operation of an appliance. Ruggedly constructed for long life and current-carrying capacity. A miniature neon lamp, visible from three directions, serves as warning glow indicating current is on. Since it is unlikely, because of this device, that current will be allowed to remain on when appliance is not in use, the switch is said to avoid waste of current, reduce chances of overheating appliances and reduce danger of burn-outs, property damage or personal injury. It may also be attached to pendant cords of lighting fixtures in such manner that neon lamp goes on when light is switched off, thus avoiding bumped shins or more serious consequences from groping for light switch. Manufacturer states that a one-year warranty accompanies every switch. Competitively priced.

DESCRIPTION — Double-pole, single-throw. Since both sides of power line are thus broken, current leakage and possibility of mild or severe shock are eliminated, with appliance completely isolated from power supply. This is particularly valuable in damp locations. Unit originally was designed for the Trilmont Safety Heater. For additional information, address the manufacturer.

TRILMONT PRODUCTS COMPANY, Dept. CP, 24th and Walnut Sts., Philadelphia 3, Pa.

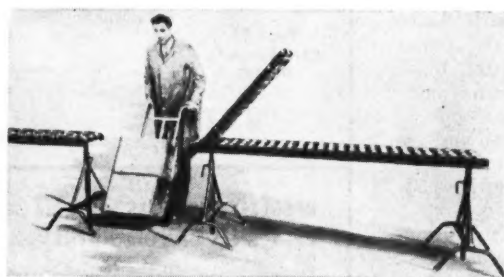
When inquiring specify CP 469 — see handy form pages 2-3

★

Hinged Conveyor Section Opens Like Drawbridge

Makes 36" passageway for personnel, trucks or equipment

USES — Hinged conveyor section for installation in Rapid-Wheel Gravity Conveyor line, as a bridge for aisle-ways, or to permit passage of personnel, trucks or equipment.



Hinged conveyor section makes 36" aisle-way

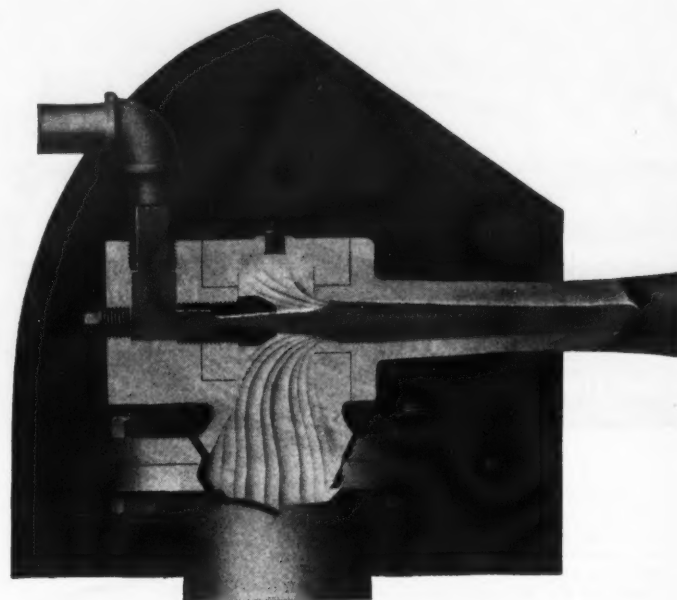
FEATURES — Provides means for breaking conveyor line as often as desired without disturbing permanent set-up or other units in the line. Ruggedly constructed hinge, with no rivets, nuts or bolts to get out of order. **DESCRIPTION** — Makes 36" maximum open passageway. To open, hinged section is swung upwards and back until it rests at an angle of approximately 45° to the stationary section. Manufacturer recommends standard "Q" type portable stands as support for the unit. Entire unit consists of 36" movable section hinged to an 84" long stationary section, making total of 10', or same length as a standard section of Rapid-Wheel Conveyor. All-steel hinge. Write for further information.

THE RAPIDS-STANDARD COMPANY, Dept. CP, Dept. HS-59, 308 Peoples National Bank Bldg., Grand Rapids 2, Mich.

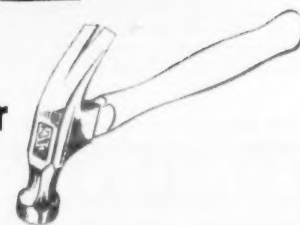
When inquiring specify CP 470 — see handy form pages 2-3

FEBRUARY, 1947

an "reason why"



no more complicated than a hammer



A hammer is a simple, functional tool.

It has nothing to get out of order.

✱ Jet Pumps are similar to a hammer.

They have no moving parts to get out of order.

They have no glands to adjust or replace . . .

No bearings, no rotating or reciprocating parts to wear.

They lift or transfer liquids or solids . . .

Exhaust liquids from tanks . . .

Produce vacuum or pressure . . .

Mix and agitate liquids . . .

Mix gases . . .

And perform many other functions . . .

SIMPLY!

Assure yourself efficient operation.

Eliminate "down time" and maintenance.

Reduce your costs.

Send, today, for Bulletin J-1.

Find out how ✱ Jet Pumps can work for you.



SCHUTTE & KOERTING COMPANY

Manufacturing Engineers

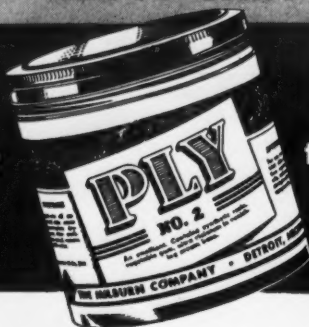
1173 THOMPSON STREET • PHILADELPHIA 22, PA.

JET APPARATUS • HEAT TRANSFER EQUIPMENT • STRAINERS • CONDENSERS AND VACUUM PUMPS • OIL BURNING EQUIPMENT • ROTAMETERS AND FLOW INDICATORS • RADIATION TUBES • VALVES • SPRAY NOZZLES AND ATOMIZERS • GEAR PUMPS

When inquiring specify CP 471 . . . see information request blank, pgs. 2-3

14 Formulas ISOLATE MORE THAN 2000 SKIN HAZARDS

Industrial Dermatitis Is Stopped by PLY Creams and Liquids



PLY
the before-work Protective Cream

"Apply PLY" has been the watchword for 15 years in safeguarding industrial workers against dermatitis. PLY provides such positive protection that it is referred to as the "invisible glove."

Send for our new, fourteenth edition, "The Answer to Industrial Dermatitis," the most complete reference book of its kind. This book provides detailed information for segregating and isolating more than 2,000 skin irritants.

"The Answer to Industrial Dermatitis" will prove especially helpful to Safety Engineers, Plant Physicians and Nurses, Personnel Directors, and Works Managers.



PIONEERS IN RESEARCH FOR PREVENTION OF INDUSTRIAL DERMATITIS

THE MILBURN COMPANY

3246 E. WOODBRIDGE ST. • DETROIT 7, MICH.

When inquiring specify CP 472 — see handy form pages 2-3

Whether for a 1" Gas Line or a 60" Air Line for Solvent Recovery

Here are just two of a wide range of Rockwell Butterfly Valves: One is a simple threaded valve with hand lever control, available in 1" to 4" pipe sizes, as would be used on air, gas or liquid lines. The other is a wafer type valve with chain wheel control, 60" pipe size. It weighs 2700 lbs., and is one of 13 such units for a large solvent recovery system, and more to come.

Both are precision built for control either manually or automatically. As a matter of fact, the blade of this large valve can be readily moved by pressing one finger on the spoke of the chain wheel. They close tightly, quickly, easily.

Wherever low pressure air, gas, liquids or semi-solids must be controlled, there's a place for Rockwell Butterfly Valves. There's a type, size and material of construction to meet specific needs. Write for Catalog No. 406R.

ROCKWELL VALVES

Slide or Butterfly Types in All Metals

W. S. ROCKWELL COMPANY—220 Eliot St., Fairfield, Conn.

When inquiring specify CP 473 — see handy form pages 2-3

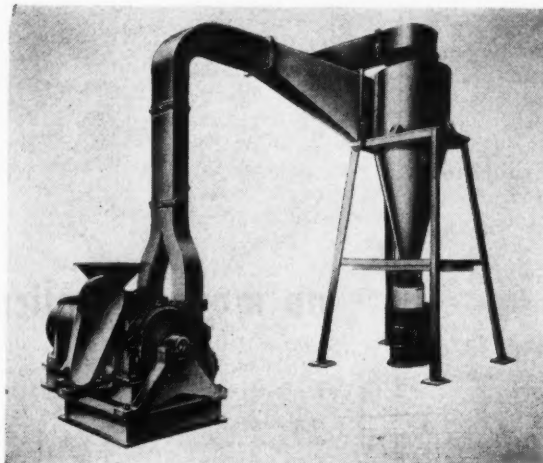
Production

Mikro-Atomizer Produces 2000-8000 lbs. per Hr.

75 hp. mechanical, screenless pulverizer makes ultra-fine powders in one to 25 micron range

USES — Mikro-Atomizer for producing ultra-fine powders in range of one to 25 microns (under 325 mesh), in large production quantities. Particularly applicable in tonnage operations.

FEATURES — Capacities of 2000 to 8000 lbs. per hr., depending on material being ground, or approximately four times capacity of manufacturer's No. 6 Mikro-



No. 8 Mikro-Atomizer

Atomizer. Operating temperature said to seldom exceed 115° F. Guaranteed control of particle size. Compact. Efficient. Entire mill housing assembly is split into halves, upper half swinging easily on substantial hinges. Rotating members, all on one shaft, may then be lifted away from lower housing. All parts which contact material being ground are highly finished for quick cleaning. Stainless steel construction of rotating members eliminates corrosion and contamination. Special nickel-iron alloy body castings take high polish and are very corrosion-resistant. Discharges into stainless steel dust collector. Rotary air lock supplied for continuously discharging material from cyclone.

DESCRIPTION — No. 8 Mikro-Atomizer. Dimensions of machine proper, without cyclone or piping: 8x7x5 1/2'. Mechanical, screenless pulverizer. 75 hp. motor. Basic operating principle lies in separating and recirculating ground particles by balanced reaction between centrifugal force and air flotation or aerodynamic drag in such way that smaller particles which meet size specification are discharged from mill while larger sizes are retained in grinding section for further reduction. Ground material in mill section is thrown radially outward by centrifugal force generated in whirling particles by rotor into path of air stream created by built-in fan. This centrifugal force imparted to coarser particles resists air drag and rejects them back into path of impact members; air drag on smaller particles overcomes centrifugal force and delivers them from machine. Point of balance between these opposing forces, and control of maximum size of delivered pulverized particles lies in regulation of relative velocity of air stream. Mill is of duplex construction insofar as it embodies, on each side of single centrally located rotor, one dispersion ring, one sepa-

PEERLESS

(Formerly Dayton-Dowd)

CENTRIFUGAL PUMPS

Built for Regular or Special Pumping Applications where Temperatures and Pressures are Variable, and Normal, Dense or Viscous Liquids are to be Handled. Types illustrated represent a few of scores of Peerless Pumps for industrial applications.



Type A CENTRIFUGAL PUMPS

For general services. Capacities: Up to 50,000 g.p.m.



Type B CENTRIFUGAL PUMPS

For Boiler Feed, Refinery and Pipe Line Service. Pressures to 700 lbs.



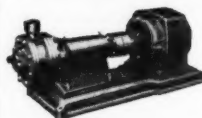
Type AF FIRE PUMPS

Formerly Dayton-Dowd Underwriters Approved. Capacities: Up to 2,000 g.p.m.



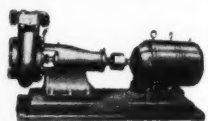
Type XT (VANE) PUMPS

For Butane-Propane, Processing and General Service. Capacities: Up to 150 g.p.m.



Type DS CENTRIFUGAL PUMPS

For Chemical, Oil, Food Processes, etc. Capacities: Up to 600 g.p.m.



PEERLESS UTILIZES ADVANCED PRINCIPLES OF HYDRO-DYNAMICS

Peerless Horizontal Centrifugal Pumps (formerly Dayton-Dowd) are available in sizes, pressures and capacities for practically all pumping services. Used to most efficiently serve applications in all industries where continuous, heavy duty pump performance is required affording long-lived, trouble-free service with a minimum of maintenance, attention and expense.

Contact or write your nearest Peerless distributor for engineering data and full details of Peerless Centrifugal Pump advantages.

PEERLESS PUMP DIVISION

FOOD MACHINERY CORPORATION
Factories: 301 W. Ave. 26, Los Angeles 31, Calif.
Quincy, Illinois — Canton 6, Ohio

When inquiring specify CP 474 — see handy form pages 2-3

CHEMICAL PREVIEW

Production

rator wheel and one fan, all assembled on a single drive shaft and one composite housing. Modifications of this machine are available to accommodate wide range of different materials. Write for additional information.

PULVERIZING MACHINERY COMPANY, Dept. CP, 60 Chatham Road, Summit, N. J.

When inquiring specify CP 475 — see handy form pages 2-3

★

1-Ton Gantry Crane is Easily Dismantled, Portable

595-lb. unit has roller bearing casters, is designed for machine shop, power plant

USES — Gantry crane, 1-ton capacity, portable, for machine shops, power plants, factories and garages, loading platforms and docks, construction, maintenance and general use.

FEATURES — Portability, flexibility and ease of handling are important considerations. Generous safety factor and minimum gantry weight. Designed for all-purpose service within limits of intermittent light cycle duty. Can be dismantled with little effort for compact shipment or storage.

DESCRIPTION — Industrial gantry cranes. Legs of structural construction, welded in jigs for precision squareness and efficient operation. Semi-steel wheeled, roller bearing casters with ball, thrust type bearings on swivel



Portable Gantry Crane

units. Weight without hoist or trolley, 595 lbs. Bridge beam underhung for lower head room. Approximate overall length at base, 12', approximate width at base, 5'6" over all. Over all height, approximately 9'11 $\frac{5}{8}$ ". For complete specifications, prices and illustrations, write for Bulletin PG-648.

INDUSTRIAL EQUIPMENT CO., Dept. CP, 315 N. Ada St., Chicago 7, Ill.

When inquiring specify CP 476 — see handy form pages 2-3

FEBRUARY, 1947

TOWERS of Strength



The Chemical Age is at hand . . .

Like fingers of destiny, the stacks and towers of refineries and chemical plants point upward toward a better world of tomorrow.

New processes . . . new developments . . . have presented new problems in the sealing of processing equipment working chemicals and petroleum products.

The Durametallic Corporation has kept pace with the sealing demands of modern industry through a continuing program of research and design in the field of packings and mechanical sealing devices.

It will pay you to consult with Durametallic engineers on your sealing problems . . . this counsel is extended without obligation. Write us direct . . . or get in touch with our nearest representative.

DURAMETALLIC CORPORATION
KALAMAZOO MICHIGAN

CHICAGO • DALLAS • DETROIT • FREDERICKSBURG, VA
MONTREAL • NEWARK • NEW ORLEANS • SAN FRANCISCO

HOUSTON • KANSAS CITY, MO. • LOS ANGELES
SEATTLE • TULSA • YOUNGSTOWN, OHIO



When inquiring specify CP 477 . . . see information request blank, pgs. 2-3

CUT HEAT EXCHANGER REPLACEMENT COSTS WITH

"KARBATE"
BRAND

**HEAT EXCHANGERS -
THEY LAST Indefinitely**



• "Karbate" Heat Exchangers will help you end the expense and delay of constantly replacing corroded heat exchangers!

"Karbate" Heat Exchangers are chemically inert. They are free from corrosion scale formation. Thus, they will stay on the job indefinitely—saving substantial replacement costs over the years.

"Karbate" Heat Exchangers have other stand-out features: A remarkably high rate of heat transfer • Extreme heat shock resistance • Light weight • Strong, sturdy—able to take rough treatment • Can be made in a variety of sizes and types from the simple plate to the large tube-bundle types.

For complete description of "Karbate" Heat Exchangers, write Dept. CP.

NUTS! EVEN
MY PET ACIDS
CAN'T EAT INTO
THIS STUFF!



"KARBATE" MATERIAL UNAFFECTED BY
Hydrochloric . . . sulphuric . . . lactic . . . acetic . . . hydrofluoric acids . . .
and by special caustic vapors . . . and other corrosive liquids and gases.

NATIONAL CARBON COMPANY, INC.

Unit of Union Carbide and Carbon Corporation
The words "Karbate" and "National" are registered trade-marks of National Carbon Co., Inc.



30 East 42nd Street, New York 17, N. Y.
Division Sales Offices: Atlanta, Chicago, Dallas,
Kansas City, New York, Pittsburgh, San Francisco

When inquiring specify CP 478 . . . see information request blank, pgs. 2-3

THE ANSWER . . .

*to many bag-closing
requirements*



★ ★ ★
THE low cost, economical Union Special Suspended Head Bag Closing Machine offers many plants an excellent solution for handling varying volumes of work. Check these features . . . Easily installed anywhere in your plant . . . Employs a space-saving pulley suspension system . . . Equipped with a built-in motor, thumb controlled clutch, and automatic brake—1 man can do the work of 5 hand sewers . . . Adaptable to a wide variety of uses on fabric or paper bags . . . Class 14500 sewing head for light and medium work or Class 80600 head for heavy duty.

For additional information, write

UNION SPECIAL MACHINE COMPANY

442 N. Franklin St. • Chicago 10, Illinois

Bag Closing Machines

When inquiring specify CP 479 . . . see information request blank, pgs. 2-3

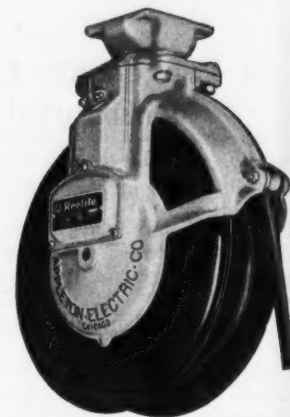
Production

**Automatically Reels, Unreels
Traveling Hoist Cables**

*Reel unit rotates up to 335°, serves curved or
straight track double its cable length*

USES — Reel is designed to cooperate with any traveling electric hoist within its rated capacity. Installation beneficial wherever electric hoists travel distances up to 90 feet.

FEATURES — Automatically takes up, pays out conductor cable, keeping cord gently taut at all times; spring-controlled reel works in harmony with movements of hoist. Safety grounding through extra conductor prevents electrical mishaps. No tangled cords to endanger plant or personnel; no exposed current collectors, trolleys or wires. Safe, economical freedom from production delays.
DESCRIPTION — Trade name: Appleton Type YS Reelite. Serves any stretch of track, straight or with one or more bends, up to double its cable length. For curved track and certain straight track installations, Reelite is furnished with swivel base allowing rotation up to 335°. Removal of outer covers is only dismantling required to fully service brushes and power spring, or to make solderless line connections direct to terminal block. Oil-less bearings at all points of rotation.



Reelite unit for electric hoists

APPLETON ELECTRIC COMPANY, Dept. CP, 1701-59
Wellington Ave., Chicago 13, Ill.

When inquiring specify CP 480 — see handy form pages 2-3

★

**Packless MagniLastic Expansion Joints Handle
Steam, Oil, Gas, Acids and Corrosives**

Years of experience in designing flanged-type bellows for industry are incorporated in packless, MagniLastic expansion joints, according to this 12-page, illustrated catalog. Text recommends them for transmitting steam, oil, gas, diesel exhaust, acid and corrosive chemicals; pressures from vacuum to 1000 lbs. psi.; temperatures from minus 300 to plus 1600° F. Standard pipe sizes from 1/2 to 24"; choice of Van Stone lap self-aligning pipe flanges or welding end fittings, and directional flow inner liners, at user's option. Diaphragm-type bellows construction is said to set no limit as to overall length, giving endurance and long life through cantilever spring-like operation. Catalog lists complete engineering data, dimensional tables and specifications on MagniLastic, Anchor, and Low Pressure-Large Diameter expansion joints. Also contains information on other MagniLastic developments such as Offset, Turbo and Jacket Joints, including material on high temperature exhaust bellows and heavy duty Clinch-Lock bellows. Write for Catalog No. 234M.

MAGNILASTIC DIVISION OF COOK ELECTRIC COMPANY, Dept. CP, 2700 Southport Ave., Chicago 14, Ill.

When inquiring specify CP 481 — see handy form pages 2-3

CHEMICAL PREVIEW

"Mealpack" Keeps In-Plant Meals Hot For Three Hours

Individual stainless steel thermidores are sanitary, tamper-proof and economical



Mealpack Containers

USES — Individual, polished stainless steel containers for serving hot in-plant or in-office blue-plate or casserole meals from a central commissary. For packaging cooked, hot (or chilled) meals, including breads, pies, cutlery and napery, at nearby or remote kitchens for delivery and serving up to three hours after packing. Solves hitherto impractical industrial

feeding problems in chemical product and processing plants, food processing and distributing plants, manufacturing and steel plants, foundries, textile and lumber mills, engineering construction jobs, oil drilling and refining operations, shipyards, mines, timbering operations. Containers are basic element of a complete system embodying a full line of kitchen packing, handling and serving equipment.

FEATURES—No external heat required, since container holds its own heat up to three hours. Where a longer heat holding period is desired, thermostatically controlled holding cabinets are available. Original food colors, aromas, moisture content and flavor sealed in each dish at kitchen with laminated aluminum foil dish closure lid which also prevents oxidation and spillage in transit. Double-seal insulation. Easily cleaned. Appetizing appearance. Sanitary, temper-proof. Meal may not be opened from kitchen to destination without mutilating a cardboard disc (see description). This disc also serves as positive identification of meal packaged within, and where pre-ordered meals are desired, permits marking each worker's meal by number. Manufacturer emphasizes a well-fed worker is happy and productive, and this system offers economical means for assuring hot, palatable meals at popular costs.

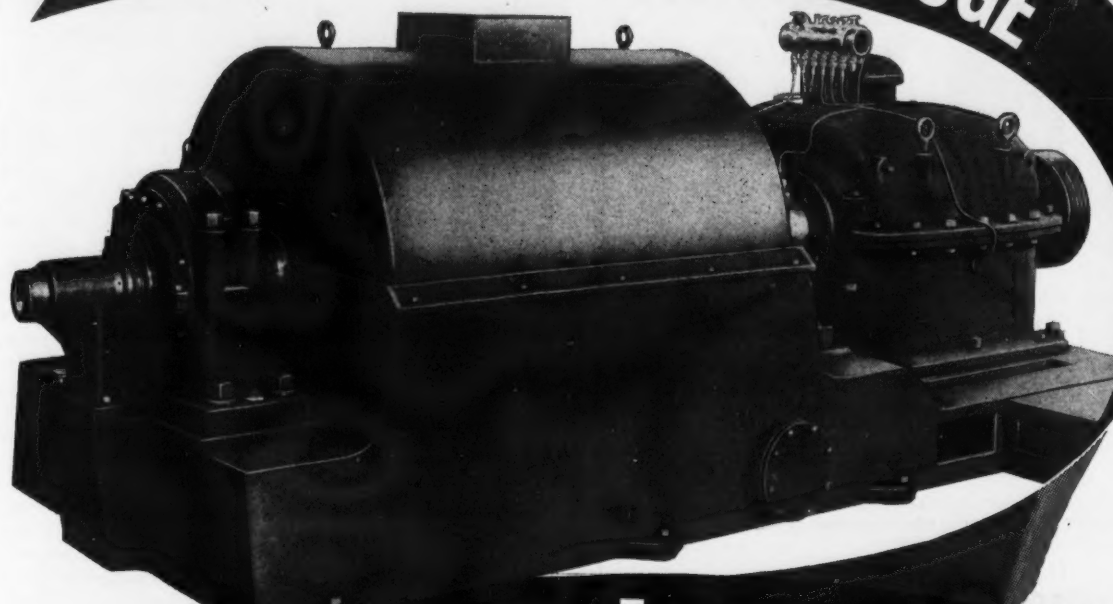
DESCRIPTION—Mealpack Container, No. 11. Outer and inner shells accurately die-formed from polished stainless steel. Newly developed insulating materials inserted between shells. Heat and air seal gaskets die-formed from a tasteless, odorless, non-tacky, resilient composition. Specially designed blueplate dishes of ovenware type glass. Cardboard disc inserted in Sealock fastener prevents opening without mutilating seal. Sealock consists of lug and hinge socket on one side of container, with Sealock clamp fastener attached to opposite side. For further details, write.

MEALPACK CORPORATION OF AMERICA, Dept. CP, 152 W. 42nd St., New York 18, N. Y.

When inquiring specify CP 482 — see handy form pages 2-3

FEBRUARY, 1947

CME Continuous CENTRIFUGE



for Fast, Continuous, Economical

- ★ Dewatering
- ★ Classifying
- ★ Fractionating
- ★ Degritting
- ★ Thickening
- ★ Extracting

CME Continuous Centrifuges offer you fast, continuous filtration at lower cost than with any other type equipment. These self-contained, compact units extract solids from liquids and separate immiscible liquids of unequal specific gravity automatically. There are no filter elements to renew or service. Uninterrupted operation results in high output.

The same engineers who developed and built the first commercially successful continuous centrifuge are available for consultation about your filtration problems. Send for bulletin giving details of this modern, efficient, low cost filtration equipment.

APPLICATIONS

For separating granular, amorphous, and crystalline materials that will surface on a screen, such as caustic recoveries, salts from brine solutions, sugars, coal, scrap rubber, ground cork, cut sponge, and pulps, screen type units having an output of 1 to 11 tons per hour are available.

For separating fines or mixed sizes fractionated to particle size or specific gravity, for refining or degrading clays or non-metallics, and for treating slimes, crystalline and fibrous matter, metal salts, fish reductions, and fine chemicals, solid bowl type units are available with 1/2 to 6 tons per hour capacity.

CENTRIFUGE MECHANICAL EQUIPMENT, INC., N. J.
Pioneers and specialists in centrifugal separation — 47 River Street, Hoboken, N. J.

When inquiring specify CP 483 . . . see information request blank, pgs. 2-3

SYNTRON

"Vibra-Flow"

DRY FEEDER MACHINES



with vibrated, non-arching hoppers, for the
CONTROLLED FEEDING

of Foods
Chemicals
Plastics
Drugs
Cosmetics
Fertilizers

Powdered Metals
Fine Clays
Foundry Sand
Binders & Flux
Retarders

Rheostat control of material movement—through the hopper and out the vibratory feeder—from a gushing torrent to a trickling dribble.

Write for literature

SYNTRON CO., 110 Lexington, Homer City, Pa.

When inquiring specify CP 484—see handy form pages 2-3



**SHRIVER
CONTINUOUS
THICKENER**

**SAVES
TIME
EQUIPMENT
LABOR**

For thickening, washing or leaching materials which do not readily settle, the Shriver Thickener makes possible continuous operation that eliminates need for large tank capacity, much plant space and long processing periods. Low in cost, easy to operate, small and compact, it can be used for any material in

1. Simple concentration of slurry.
2. Washing or extracting continuously.
3. Thickening and washing prior to or instead of Filtering, cutting filtration costs.
4. Continuous catalytic reactions.

Bulletin No. 115 "tells all"

T. SHRIVER & COMPANY, Inc.

846 Hamilton St.

Harrison, N. J.

When inquiring specify CP 485—see handy form pages 2-3

Production

Monel Metal Pressure Blowers Resist Corrosive Fumes

Monocoque designed in 36" to 8' diameters with
up to 100,000 cfm at 4" H₂O; 1 to 60 hp



Corrosion-resistant pressure blower

USES—Heating and ventilating engineers, plant engineers of chemical plants and manufacturers of heat transfer equipment will be interested in this new series of high efficiency, direct drive, corrosion resistant, axial flow pres-

sure blowers. For handling corrosive fumes, or for use wherever pressure blowers are needed.

FEATURES—Outstanding feature is fabricated monel metal construction incorporating spherical hub and ring. This method of construction is said to mean "tailor made" maximum efficiency for each set of performance requirements without additional cost. Peak efficiencies at each of a variety of volume and pressure combinations is attained through proper selection of the number of blades, blade pitch setting, guide vane setting, motor speed and motor horsepower. Utilizing the aeronautical principle that strength and weight are not necessarily synonymous, these blowers are designed on a stressed skin, or monocoque basis, the spherical, curved and formed sections combining exceptional strength with low weight. Although Monel is standard, either series may be furnished in stainless or aluminum.

DESCRIPTION—Two basic groups, Series 16 and 24, indicate 16" and 24" hubs. Series 16 available in 36 to 60" diameters delivering up to 40,000 cfm at static pressures to 4" H₂O. Series 24 unit is 4 to 8' diameters delivering up to 100,000 cfm at static pressures to 4" H₂O. Tandem installations for higher pressures. Important to maintenance engineers is a weatherproof, non-overloading, direct drive motor made especially for these units. Motor carried on permanently sealed ball bearings. No gears or belts. Speeds from 300 to 1800 rpm, one to 60 hp. Motors are mounted on synthetic rubber shock mounts, and are completely enclosed within hub and housing. Ventilating air is brought from outside the air stream. For additional information, write for 12-page, illustrated booklet.

THE MOORE COMPANY, Dept. CP, 544 Westport Road, Kansas City 2, Mo.

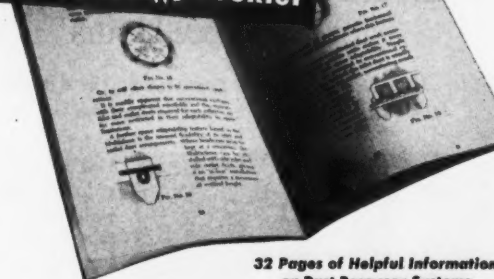
When inquiring specify CP 486—see handy form pages 2-3

★

Fan-Stacks and Dust Collectors are Subject of Catalog

20-page catalog covers draft producing and dust collecting equipment. Various type fan-stacks are described, and diagrams show their applications, also methods of mounting. Supplementing material on tubular dust collectors is information concerning a new Duplex collector, designed for collection efficiency higher than the straight tubular dust collector. This, text explains, is accomplished by use

FREE! New MULTICLONE Booklet



32 Pages of Helpful Information
on Dust Recovery Systems

If you are now using dust or fly ash recovery equipment in your plant—or are planning installation of such equipment now or later—you will find this new Multicloner booklet full of helpful information. Illustrations and diagrams outline basic principles of dust recovery and how to utilize them for maximum efficiency...how to simplify your

installations...how to conserve valuable plant space...how to get high recovery over a wide range of particle sizes, etc. A copy of this booklet should be in your files for reference and assistance in dust recovery applications. A free copy will gladly be sent you on request. Write today while supplies are adequate.



**WESTERN
Precipitation
CORPORATION**
ENGINEERS, DESIGNERS & MANUFACTURERS OF EQUIPMENT FOR
COLLECTION OF SUSPENDED MATERIALS FROM GASES & LIQUIDS
Main Office: 1023 WEST NINTH STREET, LOS ANGELES 15, CALIFORNIA
CHRYSLER BLDG., NEW YORK 17 • 1 LA SALLE ST. BLDG., 1 N. LA SALLE ST.,
CHICAGO 2 • HOBART BUILDING, SAN FRANCISCO 4, CALIFORNIA
PRECIPITATION CO. OF CANADA, LTD., DOMINION SQ. BLDG., MONTREAL

When inquiring specify CP 487—see handy form pages 2-3



Glass may be the ideal medium for the filtration phase of your processing. The glass used in the manufacture of F-M WOVEN GLASS FILTER MEDIA is special chemical glass which gives it the most desirable characteristics for use in the filtration of chemicals.

Filter Media Corporation

HAMDEN 14, CONNECTICUT
CHICAGO • SALT LAKE CITY

SPECIALISTS IN FILTER CLOTH FOR INDUSTRIAL FILTRATION

When inquiring specify CP 488—see handy form pages 2-3

Production

of an electrical or mechanical secondary handling only a small part of the total gas. A section is devoted to fan wheel types and details of fan construction, with illustrations. Additional pages cover specific installation problems and the Aerotec tube, applicable to many industrial operations formerly requiring electrical precipitation. Photo-micrographs show tube's performance on fly ash at high temperatures. A list of users, and the type of equipment employed, is appended. Catalog No. 200 may be obtained by writing.

THERMIX ENGINEERING COMPANY (Project and sales engineers for Prat-Daniel Corporation), Dept. CP, Greenwich, Conn.

When inquiring specify CP 489 — see handy form pages 2-3

★

Heavy Duty Expansive Bit Cuts Hard Wood with Minimum Effort

Electric or drill press unit bores 1-1/2" to 3-1/2" holes; finely-threaded screw "pulls" bit through wood



USES — This heavy duty expansive bit will be of interest to everyone who works with wood. It is for use in an electric drill or drill press, to bore holes 1 1/2" to 3 1/2" in hard or soft wood.

FEATURES — Cuts rapidly and smoothly with long, curled shaving. The lead screw is threaded finer than usual for this type of tool, a feature which helps pull the bit through.

Heavy duty expansive bit the wood with only light pressure. Positive feed of the improved, diamond-shaped screwpoint assures steady advance of bit through the work. At the same time, diamond-shape of screwpoint insures less chance of breakage. Threads are ground to correspond to capacity of tool. Thus, regardless of diameter of hole being cut, or whether through thin material or thick, holes are cut clean, true, with minimum effort. Cutter cannot get out or adjustment since it is lock tight by means of a heat-treated machine screw. Sturdy construction. Large, open blade keeps cutters clean of chips.

DESCRIPTION — Bruno heavy duty expansive bit No. 221. Has 1/2" straight shank. Center lip, which cuts away core at center of hole, extends back to form clamp which holds adjustable blade firmly at diameter set. Clamp is locked tight by screw. Equipped with two cutting blades, one long and one short, to cover range of tool. Graduated scale on blade makes easy adjustment. Blades are forged from highest grade carbon tool steel. They are easily sharpened in the conventional way, or easily replaced. Smaller diameter holes may be cut to any depth with the shorter cutter, which has diameter range of 1 1/2" to 2 7/8", as compared to 2 1/2" to 3 1/2" for long cutter. Packed in individual, illustrated boxes with full instructions for operation and blade sharpening. Write for details.

BRUNO TOOLS, Dept. CP, 9330 Santa Monica Blvd., Beverly Hills, Calif., Dept. No. 221.

When inquiring specify CP 490 — see handy form pages 2-3

FEBRUARY, 1947

sea of plenty—MORE!



GET THE COMPLETE STORY!

An outline of the important aspects of the Solexol process; plus production specifications of typical yields of various types of vegetable, animal and marine oils, is given in a free booklet—"Prescription for Glycerides." If you haven't received your copy, send for it today.

SOLEXOL

IMAGINE *Clupea pilchardus*—the humble sardine—vitalizing the health of the nation's livestock and poultry! And indeed of man!

Yet that's exactly what is happening. For sardine body oil now gives up highly concentrated vitamins A and D for livestock feeds... releasing vitamins of the richer but scarcer shark and cod liver oils for direct human needs.

A brilliant new process called Solexol does it. Solexol skims vitamins right out of the low potency oils of sardines, herring, codfish, menhaden...

This is just one of its great capabilities!

Solexol, a continuous process, separates the fractions of vegetable and animal oils, too... each fraction according to its molec-

ular weight and structure. It neither destroys nor degrades any portion of the feed stock through chemical change or decomposition. It delivers utmost yields of premium products.

These products can favorably affect the flavor and appearance of foods... the utility, appearance and odor of soaps... the value and taste of certain drugs... the drying and lasting qualities of paints.

Economical to a degree never before obtained, with basic operating costs often as low as a fraction to three cents a gallon, Solexol has already been adopted by leading companies. Executives are invited to send for detailed information. *Glyceride Processes Division*, The M. W. Kellogg Co., 225 Broadway, New York 7, N. Y.

SOLEXOL decolorizes, separates, extracts, concentrates and deodorizes:

VEGETABLE OILS	
Soybean	Cottonseed
Linseed	Peanut
	Tall
	Other similar types
ANIMAL PRODUCTS	
Tallow	Waxes
	Greases
MARINE OILS	
Fish body oils and liver oils having widely different physical, chemical and vitamin-potency characteristics.	
FATTY ACIDS From all sources	

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THE M. W. KELLOGG COMPANY

Engineers and Economists to International Industry

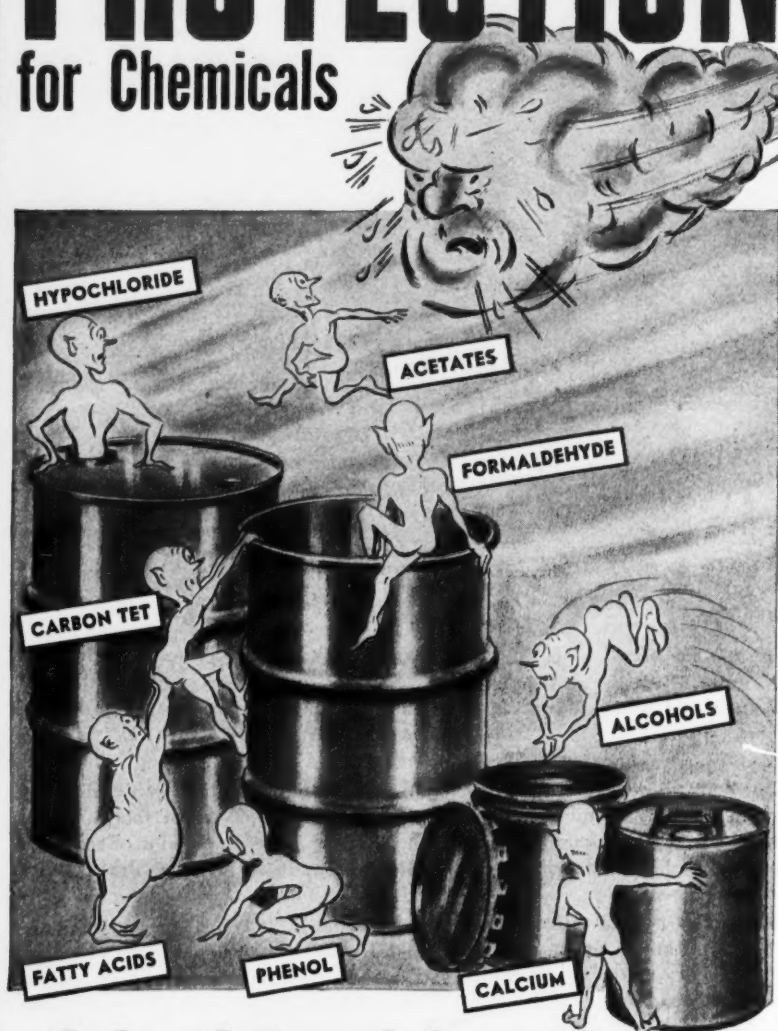
New York, N. Y.
Tulsa, Okla.

Jersey City, N. J.
Houston, Texas

Los Angeles, Calif.
London, Eng.

When inquiring specify CP 491 . . . see information request blank, pgs. 2-3

PROTECTION for Chemicals



Inland Steel Containers

...safest, sturdiest, and most convenient shipping containers for chemicals — withstand rough handling, no leakage, no spoilage; dampness and fumes do not penetrate the steel container.

Available in a wide variety of sizes and styles best suited to the product. Convenient openings make filling easy and airtight resealing after opening practical.

INLAND STEEL CONTAINER CO.

Container Specialists

6532 S. MENARD AVE., CHICAGO 38, ILLINOIS

Plants at: Chicago • New Orleans • Jersey City

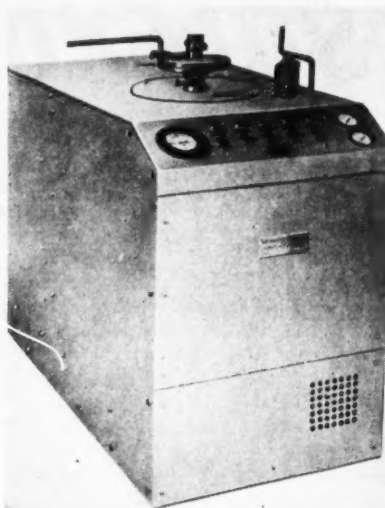
Production

Unit Heats Jacketed Process Equipment

Standard sizes 14 to 65 kw.,
special units to 550° F.

USES — Line of jacket oil heaters designed to supply low pressure heat transfer system for cylinder jackets and dies of plastic extruders, calendar rolls, jackets of stills, processing kettles and similar jacketed equipment.

FEATURES — One, two, three or more temperatures simultaneously. Wide temperature range. Accurate temperature controls. Five to 150 kw. of heat, or more, if required. Temperatures variable through manual selection. Stationary or portable models. Compact. Can be installed quickly, inexpensively, requiring only a power line connection and small amount of external piping. Both installation and operating cost compare



Jacket oil heater

favorably with steam, vapor or other pressure systems. Liberal use of insulation cuts heat losses to minimum. Since heaters are not in contact with the oil, there is no fire hazard.

DESCRIPTION — Four standard sizes range from 14 to 65 kw., and special units to supply any volume of heat at temperatures to 550° F. will be furnished. Heat is supplied by finned tube heaters through which heat transfer oil is pumped at a rate consistent with the conditions of service. Manufacturer states he can supply custom built jacket oil heaters to meet any requirement. Additional information on request.

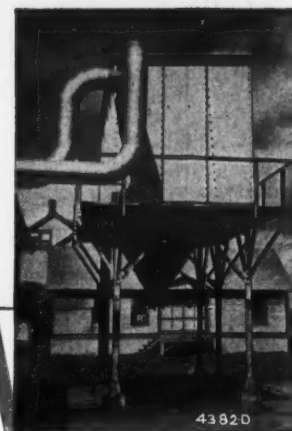
THE YOUNGSTOWN MILLER CO., Dept.
CP, 675 Main St., Belleville, N. J.

When inquiring specify CP 493
— see handy form pages 2-3

SLY DUST Control

Adopted as
STANDARD
By Many Firms

Typical Sly Dust Filters on a standard support with walkway, with dust pipes leading to the filter. All Sly Dust Filters are of weather-proof construction for out-of-door installation. Standardized construction for low cost.



The Sly Dust Filter actually filters the dust out of the air by passing it through a series of cloth bags ingeniously arranged in a compact space within the filter case. The cleaned air contains no visible dust.

Sly Dust Filters comply fully with the requirements of the laws and regulations of the various states. This equipment is not expensive.

ASK FOR BULLETIN
98 . . Tell us your problem so that we can write you fully!

THE W. W. SLY MFG. CO.
4754 Train Ave., Cleveland 2, O.

SLY

INDUSTRIAL DUST CONTROL

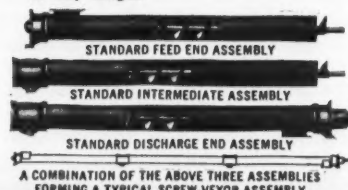
When inquiring specify CP 494 — see handy form pages 2-3

Your Own Comparison Will Convince You!



Screw-Veyor is absolutely dust-tight and moisture-proof. The screw operating within the tube is held in place by bearings at each junction. There is no structural weight upon the tube. Alignment is maintained at all times. Cleanliness, flexibility, accessibility, and space saving are other outstanding advantages.

Screw-Veyor is designed to form a continuous system for the free-flow of materials from one stage of operations to the other. Screw-Veyor is manufactured in segments, comprising a feed and assembly — with any number of intermediates — ending with a discharge assembly. Material can be conveyed to any distance, or spouted at any point in between. Each assembly is precision built, comprising a definite length of 6, 9, or 12 inch conveyor (Helicoid) encased within a tube. When joined together, it forms a continuous totally enclosed precision system of any length.



Write
for Form
No. M-600-2



When inquiring specify CP 495 — see handy form pages 2-3

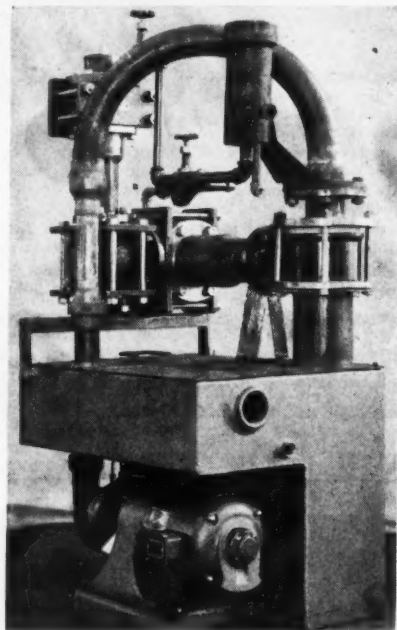
CHEMICAL PREVIEW

Hydro-Steam Unit Gets Economical, Quick Vacuum with Little Water

Compact machine handles all vacuum ranges to 1 mm. absolute; 1-1/2 to 7 1/2 HP, 8 to 68 gpm

USES — Hydro-steam vacuum unit for obtaining a quick, efficient, economical vacuum with a small amount of water. Suitable for intermittent operation.

FEATURES — Highly flexible. Water jet alone can be used to produce a vacuum, and by cutting in one or more steam jets, all possible vacuum ranges can be handled. Present absolute pressures obtainable are in fractional



Hydro-steam vacuum unit

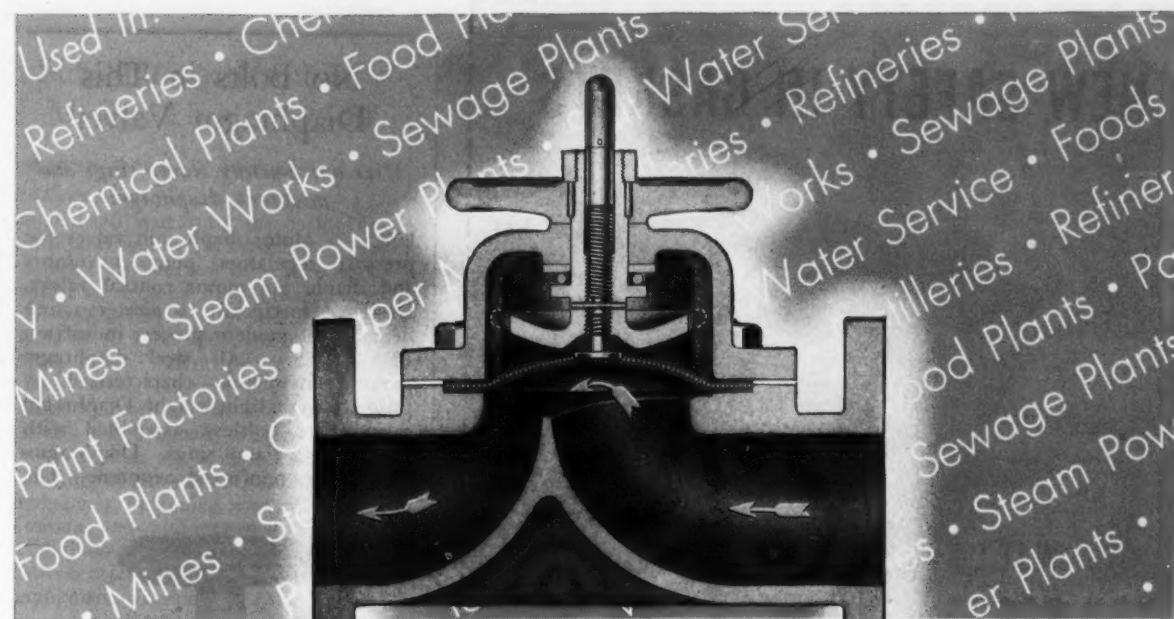
millimeter mercury range. By recirculating condensing water through water jet exhauster, unit requires but small amount of make-up water to maintain vacua in ranges to 1 mm. absolute. Compact, readily installed, easily operated, requires almost no maintenance. Auxiliary equipment can include separators, strainers, pressure regulating valves and superheaters. No barometric leg necessary. Can be constructed of various corrosion-resistant materials. Available in 1, 2 or 3 stages of steam jet boosters.

DESCRIPTION — Steam jet exhausters operate in series, discharge into water jet exhauster which serves as condenser for actuating steam and as low vacuum stage jet. Water discharges from exhauster in specially designed chamber where it is stored for re-use and from which non-condensable gases are liberated. Water is recirculated through water jet exhauster by small centrifugal pump, an integral part of unit. To maintain required vacuum, small amount of make-up water is added continuously. In HP's from 1-1/2 to 7-1/2, 8 to 68 gpm make-up water consumption, 40 to 340 lbs. per hr. steam consumption 125 lb. PSI G.; 1.6 to 13.5 capacity in lbs. per hr. air at 5mm Hg. abs. For additional data, request bulletin supplement 5-AA4.

SCHUTTE & KOERTING COMPANY, Dept. CP, 12th & Thompson Sts., Philadelphia 22, Pa.

When inquiring specify CP 496 — see handy form pages 2-3

FEBRUARY, 1947



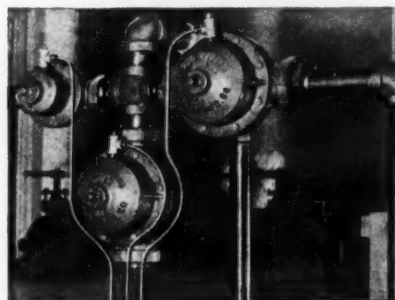
NO RE-PACKING

...NO RE-SEATING

...NO LEAKS!

...No Valve Trouble with McAlear No. M-1455 Diaphragm Valve

★ Pressure, Vacuum to 125 lbs. ★ Temperatures to 150° F. ★ Sizes 1/2" to 6"



IDEAL FOR HANDLING CORROSIVE and ABRASIVE FLUIDS and SUSPENDED SOLIDS.

In refineries, chemical plants, processing and food plants—in sewage and waterworks—in power plants, paint factories and paper mills—in salt water service and in city deep well service, etc., McAlear No. M-1455 Diaphragm Valve has re-

placed many gate and other expensive types of valves.

This valve requires no re-packing, no re-seating, and cannot leak in any position. Closure is not dependent on metal-to-metal contact and diaphragm separates mechanism completely from fluids handled. Shut-off is positive, even with solids trapped on seat. Long-life diaphragm is replaceable with valve in line.

SPECIAL PRESSURE operated types (see photo above) are available for automatic or pilot control. For complete data, write for Bulletin No. 118-A to McAlear Manufacturing Division, Climax Industries, Inc., 1905 S. Western Ave., Chicago 8, Illinois.

McAlear Type H-850
LEVEL CONTROL
with Type H-1410
PILOT



Wide throttling range—0 to 300%—or "snap" action. Size 6" diameter. Floats: 14" to 120". Working pressures 125 to 2500 lbs. Write for Bulletin No. 103.



NEW SELF-ACTING, PRECISION TEMPERATURE CONTROL

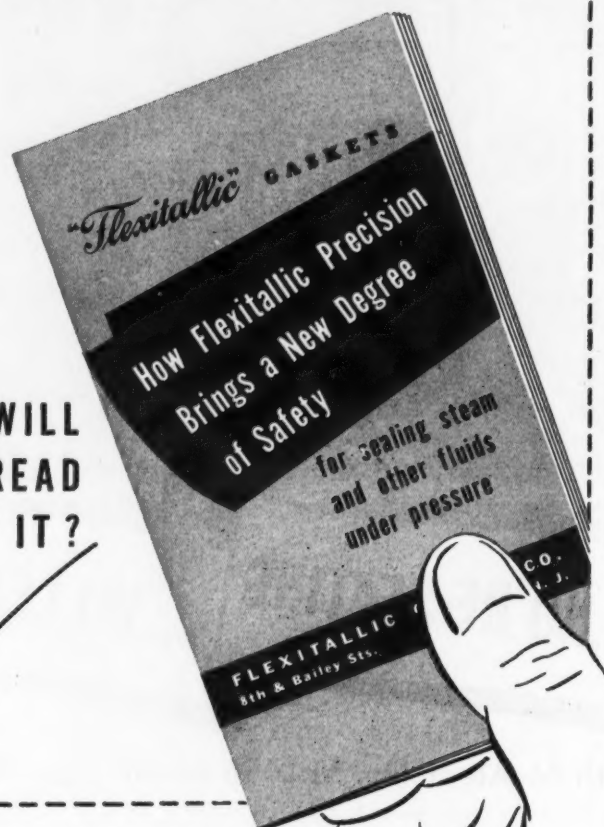


Standard range: 140° to 180° F. Other 40° ranges from 75° to 260° F. Higher ranges on special order. Write for McAlear Temperature Control Bulletin.

When inquiring specify CP 497 . . . see information request blank, pgs. 2-3

NEW SAFETY IN GASKETS

WILL
YOU READ
ABOUT IT?



This new little book speaks of safe-sealing for fluids under pressure with the plain honesty the subject of safety deserves.

It tells with sketches and few words how the "Flexitallic" art which established itself in wide use through safe performance has now put safety on a new level.

You are not asked to abandon one theory and accept another. The book deals with a record of performance and identifies the practices that make the record possible. You are urged to believe only what pre-testing can—and will—prove to you.

We'll send you a copy

A post-card will serve but you will help us in record-keeping by giving us the name of your company and your title or department.

Originators of Spiral-Wound
Gasket Construction



Gaskets of this name are
manufactured only by

FLEXITALLIC GASKET COMPANY
8th and Bailey Streets Camden, N. J.

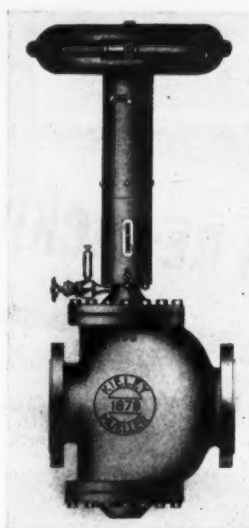
When inquiring specify CP 498 — see handy form pages 2-3

Production

No Bolts in This Diaphragm Valve!

*Uses quick-acting clamp rings and
neoprene diaphragm*

USES — Motor diaphragm valves for pressure regulators, pump governors and diaphragm motor control valves. Designed specifically to meet exacting demands of modern process industries. **FEATURES** — All steel diaphragm motor construction characterized by great strength, light weight. Diaphragm casings are boltless, assembled with quick-acting clamp rings. Diaphragms of molded, reinforced neoprene. Un-



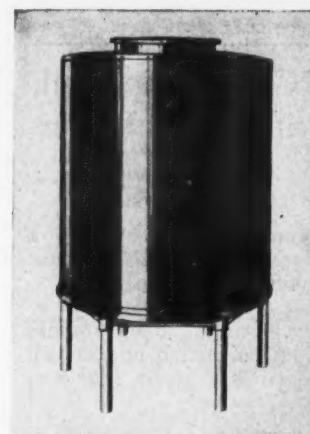
Motor diaphragm valve

usually large, effective diaphragm areas combined with heavy, fully enclosed, heat-treated springs which assure maximum power. Rugged, simple, accurate. Engineered to take full advantage of wartime production methods.

DESCRIPTION — Kontrol Motor Diaphragm Valves. Available in bronze, semi-steel, cast steel and special alloys. Wide variety of trim materials. Quick-opening, percentage V-port and parabolic discs may be used. Discs are top and bottom guided, and guide surfaces are ground and superfinished for minimum friction, maximum life. Valve position indicators are standard equipment. Unusually high capacity valve bodies with unrestricted flow areas. Six casing sizes, approximately 6, 9, 12, 15, 18 and 25" diameters, suitable for pressures to 250 lbs. psi. Literature sent on request.

KIELEY & MUELLER, INC., Dept. CP,
North Bergen, N. J.

When inquiring specify CP 499
— see handy form pages 2-3



Write for
Catalog

**STAINLESS
STEEL
PROCESSING
AND
STORAGE
VESSELS**

We build them in many capacities, and styles for standard or special uses.

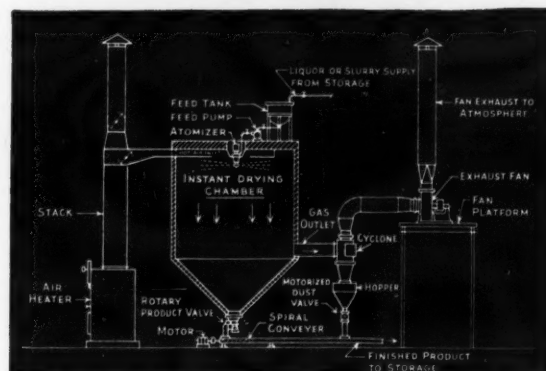
All seams are welded inside and out. Welds are ground perfectly smooth and polished. Easy to clean and keep sanitary. Bottoms on most styles are designed to be self-draining. Highest quality finish and workmanship.

Mixing units, flush valves, faucets, and other fittings required for your individual requirements, are readily adaptable.

Let us figure on your next requirements. Write Dept. B.

PFAHLER — CLELAND CO.
STAINLESS STEEL TANK SPECIALISTS
GALION, OHIO

When inquiring specify CP 500 — see handy form pages 2-3



LOW COST DRYING

with The "INSTANT DRYING" System

- Less power and a smaller connected load required.
- Engineered to be trouble free.
- Large capacity, rugged construction.
- Requires a minimum of labor and attention (one man can supervise the operation of a battery of several Instant Drying units per shift).

Many of your industrial colleagues have proved the savings that can be secured through the use of THE INSTANT DRYING SYSTEM. Write to us on your drying problem. We shall answer your questions and send you detailed literature on THE INSTANT DRYING SYSTEM.

INSTANT DRYING CORPORATION

101 Park Avenue, New York 17, N.Y.

Testing and Research Laboratories at Poughkeepsie, N. Y.
Engineering by CLARK, MacMULLEN & RILEY, INC., New York

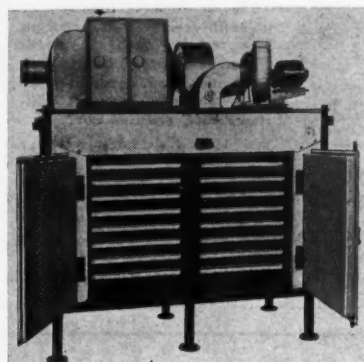
When inquiring specify CP 501 — see handy form pages 2-3

CHEMICAL PREVIEW

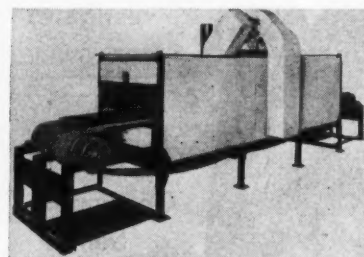
BETTER WAYS TO DRY YOUR PRODUCTS

More Uniformly and Faster

Here are but two of the many horizontal cross-flow uniform heat recirculation ovens Gehrich employs in improving baking or drying processes. Your choice, of course, must depend on the nature, quantity and heating cycle of your product. A Gehrich Oven is "tailor-made" to do your job better. Outstanding chemical and process material producers are Gehrich Oven users. Write for Catalog No. 114.



Cabinet type, cross-flow heat recirculation oven for fast drying any process materials. Heated air moves horizontally across each tray, assuring uniform drying, despite close loading.



Belt conveyor oven with 1, 2 or more parallel belts for carrying trays of material through recirculation heated chamber continuously at desired rate.

Gehrich Ovens
GAS • OIL • STEAM • ELECTRIC

GEHRICH OVEN DIVISION
W. S. ROCKWELL COMPANY
200 Elliot St. Fairfield, Conn.

When inquiring specify CP 502
— see handy form pages 2-3

Production

Inter-Com Sub-Stations Use No Power, Call Master Unit at 2500'

Can be installed at spots remote from electric outlets; "din-silencer" stifles excess noise

USES — Inter-communication system for conversing between one master station and one to 10 sub-stations, particularly where sub-stations are located in remote spots away from power supply, or in noisy surroundings. **FEATURES** — Extreme versatility. Sub-stations may be installed in remote spots up to 2500' from master station, and consume no electric power. Hence, sub-stations do not require locations near power supply. Master station can call any one or all sub-stations at will, and receive an answer. Sub-stations can also originate calls to master, using "silent feature" which shuts out at master station all conflicting sound originating at sub-station location. System may be built progressively, beginning with one master station and one sub-station, and adding new sub-stations as needed. A recent addition to manufacturer's complete line of inter-communication systems, this new line of low-priced, dependable equipment incorporates features previously found only in more elaborate models. Cabinets occupy minimum desk or work table space. Low price plus economical operation.



Talk-A-Phone master and sub-stations, Special DeLuxe Series

DESCRIPTION — Talk-A-Phone KR-4010 Special DeLuxe series. One master station and one to 10 sub-stations. Powerful, high gain amplifier. Silver plated switching mechanisms throughout. Entire system operates universally on 110-115 volts AC or DC. Streamlined cabinets of dignified design, choice walnut woods. Master cabinet is 9 3/4" wide, 6" deep, 6 3/4" high, with shipping weight of 8 lbs. packed. A 12-page catalog describes manufacturer's complete line, available in 10, 20, 30, 40, 50, 60, 80 and 100 stations and for several simultaneous two-way conversations. For additional information, write for new Talk-A-Phone catalog and for special descriptive sheet concerning the new Special DeLuxe series.

TALK-A-PHONE COMPANY, Dept. CP, 1512 S. Pulaski Road, Chicago 23, Illinois.

When inquiring specify CP 503 — see handy form pages 2-3

★

HAVE YOU A NEW SOLUTION?

Has a recent use of your equipment solved a difficult chemical plant problem? The equipment may be new or from your standard line. For publication, data should state definitely (1) Nature of operation in question, i.e., cooking, cooling, mixing; (2) Difficulties involved such as control of temperature, product uniformity, lubrication or cleaning; (3) How was equipment used — in standard or modified form? (4) Results, facts on savings in time, labor, increased production or similar cost factors or extent of product improvement. Address the Editors.

CHEMICAL PREVIEW
737 N. Michigan Ave., Chicago 11, Ill.



DRY CHEMICAL FIRE EXTINGUISHERS

WRITE TODAY FOR CHARTS
SHOWING COMPARATIVE
RATINGS ON FLAMMABLE
LIQUID FIRES AS DETERMINED
BY NATIONALLY RECOG-
NIZED APPROVAL AGENCY.



Highest Ratings for Speed and Effectiveness

WITH THE NEW ANSUL-DUGAS DRY CHEMICAL
FIRE EXTINGUISHER

Speedy-fast action is the first essential in preventing major fire damage. The NEW Ansul-Dugas Extinguishers, for Class B and C fires have the highest ratings for SPEED and EFFECTIVENESS, pound for pound, as determined by impartial authority. These highest ratings mean positive put-out of your incipient fires by ANY of your employees.

STOP FIRE FASTER!
with Ansul-Dugas Dry Chemical Extinguisher

FEATURES OF THE NEW ANSUL-DUGAS EXTINGUISHER

- Greatly increased fire-killing power.
- Expert extinguishing by inexperienced operators.
- Simplified—faster operation.
- Quicker, easier, on-the-spot recharge after use.
- Greater fire-fighting effectiveness, pound for pound, dollar for dollar.
- Longer range stream and greater shielding of heat from operator.
- Increased fire-fighting capacity without increased weight.
- Engineered to resist corrosion.

ANSUL CHEMICAL COMPANY
FIRE EXTINGUISHER DIVISION, MARINETTE, WISCONSIN

When inquiring specify CP 504 — see handy form pages 2-3

Now Available in standard types

COOPER Certified
Stainless Steel
Valves and Fittings

*made of any wanted alloy to resist
Corrosion...Heat...Abrasion...*

* In producing "Certified" valves, Cooper registers the analysis of each heat and stamps each casting with its heat number. When desired a certificate of the analysis is issued which applies to all Stainless Steel valve parts which come in contact with the fluid handled.

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The COOPER ALLOY FOUNDRY CO.
150 BLOY STREET, HILLSIDE, N. J.

*Specialists in Corrosion Resisting Stainless Steel
... For a Quarter of a Century ...*

When inquiring specify CP 505 — see handy form pages 2-3

SIGNODE

**PERFORMS AN
IMPORTANT FUNCTION
IN INDUSTRY**



Caustic soda in drums travels safely with the protection of Signode's wall anchored loading.

● Even chemicals in bulk can be shipped in greater safety with Signode's PLANNED PROTECTION. Damage in transit is reduced to a minimum. Signode Methods provide top security and economy for all shipments — in drums, pails, bags, cartons or bulk. Undamaged arrival is more essential now than ever before.

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391 Furman Street, Brooklyn 2, N. Y.
477 Bryant Street, San Francisco 7, Calif.
Branches in 21 Principal Cities

SIGNODE
STEEL STRAPPING

When inquiring specify CP 506 — see handy form pages 2-3

Production

**Roof Coating Reflects 75% Heat,
Cools Interior 10 to 40 Degrees**

Increases weather protection — adds to roof life

USES — As a protecting coat for roofing against the heat of summer sun.

FEATURES — The non-porous, metallic coating offers substantially increased weather resistance to the roofing materials with which it is used. High grade roofing oil in this preparation penetrates the felts of a roof and checks the drying out process. No special tools or equipment are required for application. It spreads smoothly and bonds well to roofing felts, composition, tar and gravel, slag, asphalt, concrete and built up roofs. Applied over a roof this coating becomes in effect a gigantic mirror, reflecting 60% to 75% of the heat rays falling on it.

DESCRIPTION — This composition is composed of extra large flakes of pure aluminum (2 to 3 times the size of ordinary flakes). They are suspended in a special, high grade liquid vehicle. As the coating is applied, these flakes float into position, overlapping each other and building up layer upon layer. Flakes and layers are cemented together by the oil vehicle into one continuous "aluminum sheet". The result is a solid, thick metallic coating without seams, cracks, laps or holes, bonded to the roof. Detailed information may be supplied.

THE UPCO COMPANY, Dept. CP, 4805 Lexington Ave., Cleveland 3, Ohio.

When inquiring specify CP 507 — see handy form pages 2-3

**IF THESE OR SIMILAR LIQUIDS
ARE HANDLED IN YOUR PLANT**

Investigate
**BLACKMER
ROTARY
PUMPS**

**Write for Bulletin 307—
FACTS ABOUT ROTARY
PUMPS**

which explains why the "Bucket Design" (swinging vane principle) automatically compensates for wear and how the buckets, when finally worn out, are easily replaced and the pump restored to its normal capacity.

Acids
Alcohols
Asphalt
Beer
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Dyes
Fuel Oil
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Mash
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Oils
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Soaps
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Syrups
Tar
Tomatoes
Yeast

BLACKMER PUMP COMPANY
1840 Century Avenue Grand Rapids 9, Michigan

**POWER PUMPS - HAND PUMPS
- EZY-KLEEN STRAINERS -**

When inquiring specify CP 508 — see handy form pages 2-3

HOUGH *Payloaders*



**FOR FASTER—LOWER COST
BULK MATERIAL HANDLING**

**LOADS, CARRIES,
DUMPS**



Model Ht Payloader, for greater capacity and heavier duty service. One yd. bucket—gasoline or Diesel power. 8 speeds forward — 2 reverse.

Hough Payloaders cut chemical handling costs, speed up production and save hundreds of man hours each day. Versatile, highly maneuverable and speedy, the Hough HA with 10½ cu. ft. bucket loads and unloads freight cars, charges bins, mixes batches, unloads ship's holds, digs, loads, carries and dumps—handling all kinds of bulk materials efficiently and economically.

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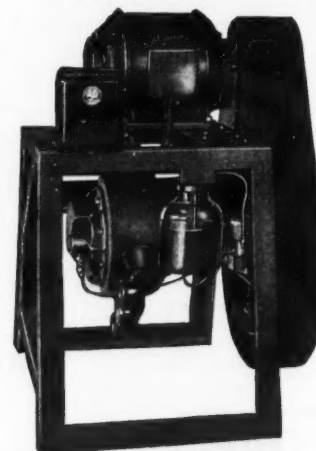
THE FRANK G. HOUGH CO.
MATERIAL HANDLING EQUIPMENT SINCE 1920
726 SUNNYSIDE AVENUE, LIBERTYVILLE, ILL.

When inquiring specify CP 509 — see handy form pages 2-3

ROTARY LAMMERT QUIET

VACUUM PUMPS

VACUUM TO 0.02 M.M. BAR. 3-580 C.F.M.



**Investigate!
MODEL SWMF.**

NEW!
**Continuous
Self
Purging
Principle**

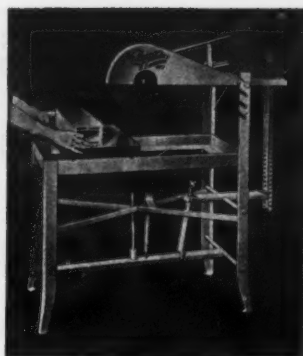
**Expels the
Contaminating
Influence!**

ENDURING HIGH VACUUM PERFORMANCE

LAMMERT & MANN CO.
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**A HALF CENTURY OF SERVICE
TO SCIENCE AND INDUSTRY**

When inquiring specify CP 510 — see handy form pages 2-3



SPECIAL SIZES AND SHAPES

... of firebrick made quickly and accurately right on the job, with new Clipper Masonry Saws.

Cuts every Masonry Material regardless of hardness: Clay, Concrete, Chrome, Magnesite, Sillimanite — Saves time, Assures better workmanship.

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**CUT IN
5 SECONDS
BY CLIPPER**



**CUT IN
9 SECONDS
BY CLIPPER**



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12 SECONDS
BY CLIPPER**

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GLOVES • APRONS • BOOTS

For Greater Protection in Plant and Lab.



"GOODSEAL" SYNTHETIC GLOVES
Smooth, flexible, tough... with a grip finish that makes it easy to pick up small or slippery articles. Will stand constant contact with virtually all solids and solutions, including fats, oils, solvents and degreasing agents.

"GOODALL" LOW ACID SHOES
For everyday wear in chemical plants, copper refineries, etc., where floors are wet with chemical or acid-tainted water. Lightweight, comfortable. Tight-gripping fire tread soles. "Toe-Saver" safety toe box.



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One of the best all-purpose aprons. . . compounded to resist chemicals and acids to a far greater degree than natural rubber and other synthetics. Strong, tough, flexible.

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When inquiring specify CP 512 — see handy form pages 2-3

FEBRUARY, 1947

Production

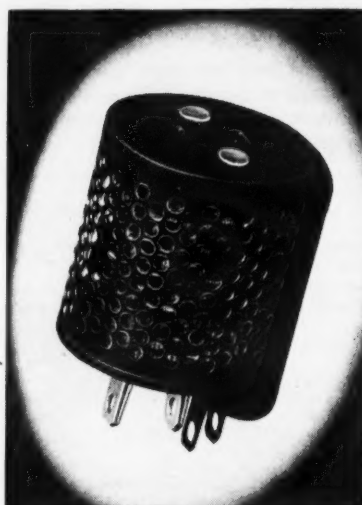
Plug-In Type Resistor Requires No Wiring

Perforated enclosure measures
1 5/8" diameter, 1-13/16" high

USES — Plug-in type fluorescent lamp resistor for use with single lamp portable fixtures for operation of fluorescent lamps on direct current. Designed for single fluorescent lamps up to and including 20 watt (T12) 24" size.

FEATURES — This fixed resistor unit requires no wiring. Operating as an adapter unit, resistor is plugged in between lamp fixture and direct current outlet. It is connected in series with auxiliary DC ballast, serving to limit fluorescent lamp current.

DESCRIPTION — Wire-wound fixed resistor. Mounted in small, perforated



Flourescent lamp resistor

metal enclosure measuring 1 5/8" diameter by 1-13/16" high, with spring pressure prongs on one end and a receptacle on the other. For additional information write for Bulletin 26.

WARD LEONARD ELECTRIC COMPANY, Dept. CP, Mount Vernon, N. Y.

When inquiring specify CP 513
— see handy form pages 2-3

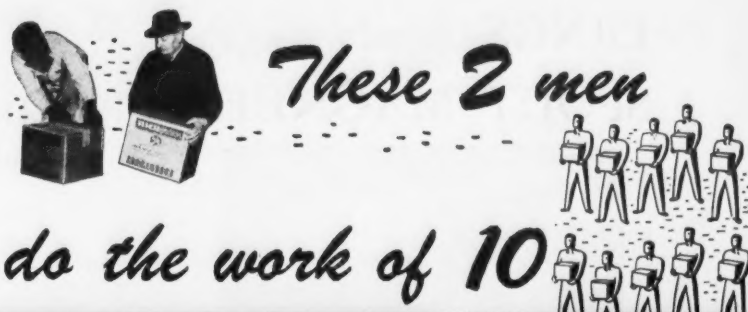
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Offers Fire Prevention Guide

Types of industrial fire hazards, how to mobilize employee fire defense, extinguisher spacing and bracketing are explained in 20-page illustrated handbook. Includes latest techniques in fighting fire with carbon dioxide and other type extinguishers. Catalog R-5827.

RANDOLPH LABORATORIES, Inc., 8 E. Kinzie St., Chicago 11, Ill.

When inquiring specify CP 514
— see handy form pages 2-3



with STEVEDORE, Jr.

Two men, one loading and one unloading, assisted by a Stevedore, Jr., will lift and carry more goods than ten men can unaided. Stevedore, Jr. uses strong, untiring machine power to perform this heavy task faster and more economically than the strongest men could.

Stevedore, Jr. is a power driven endless belt conveyor on an adjustable base. Stacks up to 6 feet at any angle. Portable — easily moved around. Plugs in any light socket. Carries up to 200 pounds of distributed load at 65 feet per minute. Used for stacking . . . loading and unloading . . . as a pusher in a gravity conveyor line . . . and for many other purposes.

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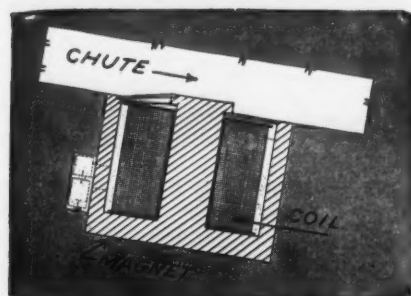
Manufacturers of
STEEL FORGED CASTERS • TRUCKS • CONVEYORS • POWER BOOSTERS

The **Rapids-Standard Co., Inc.**

Sales Division—350 Peoples National Bank Bldg., Grand Rapids 2, Michigan

When inquiring specify CP 515 — see handy form pages 2-3

DINGS Double-Gap SPOUT MAGNETS



afford EFFECTIVE, ECONOMICAL IRON REMOVAL

DINGS Double-Gap Spout Magnets are High Intensity separators for removing iron from material passing down a chute. Installed in the chute as shown in the diagram, they hold iron fast below a step in the magnet face. It is practically impossible to dislodge an accumulation of iron until the current is turned off. For automatically discharging the iron an automatic gate can be supplied as an integral part of the magnet. Here's trouble-free, positive, economical tramp iron-removal. Dings also builds a complete line of Magnetic Pulleys and Suspension Magnets. Write for details today.



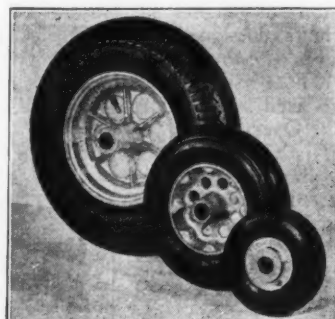
Dings Magnetic Separator Co.
4731 W. McGeogh Ave.,
Milwaukee 14, Wis.

When inquiring specify CP 516 — see handy form pages 2-3

Production

All-Aluminum Alloy Wheels Move Hand Trucks, Other Equipment

*Choice of 4" to 16" diameters on cushion,
pneumatic or moulded-on rubber tires*



Aluminum alloy wheels

old style wheel with cast iron hub iron hub center.

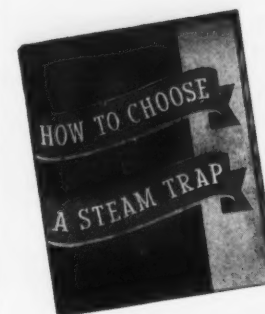
DESCRIPTION — Made of aluminum alloy, 4" to 16" in diameter. Wheelbarrow sizes have either pneumatic or zero-pressure rubber tires.

HUTTON WHEEL CORPORATION, Dept. CP, 2110 Walnut St., St. Louis 3, Mo.

When inquiring specify CP 517 — see handy form pages 2-3

USES — Aluminum alloy wheels with pneumatic, cushion, or moulded-on rubber tires for hand trucks, casters and similar uses. Also a complete range of wheelbarrow sizes.

FEATURES — Light weight, corrosion and rust-resistant. Said to be stronger than



5 STEPS to correct steam trapping

1. Find the condensation rate
2. Make right allowance for air handling needs
3. Consider peak load conditions and pressure fluctuations
4. Look at the low cost factors of installation and maintenance
5. Pick the type, size and make of trap to fit your needs

● This book is a time-saver. It helps you through each of the five steps necessary in getting the right steam trap for your needs.

It gives air handling considerations, allowances for peak loads, cautions and recommendations, standard practice hints; notes and drawings on installations; maintenance suggestions, other helps and tips. Do you want this kind of help? Then send for your free copy today.

THE V. D. ANDERSON COMPANY
1966 West 96th Street • Cleveland 2, Ohio

SUPER-SILVERTOP STEAM TRAPS

When inquiring specify CP 519 — see handy form pages 2-3

Since 1905, in industries dependent on refrigeration compressors, "BAKER" has always meant the finest in refrigeration equipment. For instance, in bakeries, a refrigeration compressor is as important in bread making as an oven. Flour needs controlled, cool storage. Other ingredients, such as yeast, milk, some shortenings and eggs all must be refrigerated. Mixing water must be cooled. Mixers must be refrigerated. Proofing and fermentation require accurate temperature and humidity control. "Retarding" takes cold, insures oven fresh products, prevents waste. Bread must be quickly cooled after baking. Other processes require humidity control. Refrigeration seals bread wrappers. Frozen bread stays fresh up to ninety days. Modern bakery shops are air conditioned. "BAKER" refrigeration compressors help bake bread throughout the world. Baker Ice Machine Co., Inc., with factories at Omaha, Neb., and South Windham, Me.

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More than Safety... for Your Glove Money



STANZOILS

of neoprene with amazing non-slip finish

● Wet or oily objects are handled as easily and safely as dry ones with these positive-gripping Stanzoils. That means confident workers, doing more with less effort. Besides, made of DuPont neoprene, these gloves stand up in oils, acids, caustics, last 3 to 7 times longer than rubber, provide better protection, cut your injury claims. Send for Stanzoil catalog showing many styles, weights, sizes. Write today.



Synthetic Rubber Division

THE PIONEER RUBBER COMPANY
239 Tiffin Rd., Willard, Ohio, U.S.A.
Los Angeles

OVER 25 YEARS OF QUALITY GLOVE MAKING

When inquiring specify CP 520 — see handy form pages 2-3

CHEMICAL PREVIEW

Discussed in This Issue - - -

MACHINERY, EQUIPMENT and MATERIALS



Use this "quick-locator" when you want information on a specific type of machine, equipment or material. Everything discussed in this issue is given here, with page references. After checking the information here, if you want more data you can write manufacturer direct . . . or turn to pgs. 2-3 and use the handy "Information Request Slip." This is a special service provided by the Publisher . . . no obligation or charge, of course. The Publishers contact the proper manufacturers for you . . . information comes to you direct.

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Refillable Draftsmen's Pencil

Has Unique Clutch
to protect
leads from
breakage

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PRICE

\$1.00



Instead of the usual metal tubular grip which scores leads and causes breakage, this new Bruning Draftsman's Refillable Pencil No. 3583 has a new type clutch which holds the lead firmly in a non-slip rubber grip. There is no nicking or scoring to weaken leads when clutch is tightened. This pencil holds leads from .079" to .070" including degrees HB to 9H of any popular drafting type lead. Long barrel permits use of full-length leads. Adjustable cap of pencil turns to show exact grade of lead used by owner. Other features include light weight—proper balance—"finger comfort" knurled grip. Professional in appearance—unquestionably a precision tool—this new pencil sells for only \$1.00. For full information, write Charles Bruning Company, Inc., 4706-8 Montrose Avenue, Chicago 41, Illinois.

BRUNING SINCE 1897

When inquiring specify CP 521 — see handy form pages 2-3

**TRY THIS BETTER LABEL PASTE..
STICKS SMOOTHLY, INSTANTLY ON
CONTAINER SURFACES**



GRIP-TIGHT Label Paste mounts labels instantly, on all kinds of container surfaces. It's a soft, white, resin emulsion paste that makes labels adhere smoothly, easily, permanently, without a wrinkle!

Widely used by all industries for labeling on tin, glass, iron, wood, fibre, or on plain, varnished or lacquered surfaces. Also better for product labels, instruction labels, express waybills, parcel post labels, etc. Very economical . . . takes excellent dilution. Trial order sent on approval. Quart—\$1.00; Gallon—\$3.00 plus postage. Low prices in larger packings.

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Please ship at once the following trial order of GRIP-TIGHT on approval:

qt. jars at \$1.00 ea. gal.
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Street

City

State

Jobber's Name

City



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When inquiring specify CP 522 — see handy form pages 2-3

FOR UNIFORM FEEDING . . .



OMEGA Disc Feeder

The OMEGA Disc Feeder is especially designed to feed small quantities of powdered materials with precision and uniformity. Volume of material fed is measured by an accurately machined groove in feeding disc. OMEGA'S variable speed drive permits infinite settings of feed rate over a 100 to 1 range. • Mechanism is simple and dependable: weigh scale at all times shows the amount fed and hopper is easily lifted off to empty contents. Get an OMEGA and simplify your chemical feeding problems!

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OMEGA MACHINE CO.
(Division of Builders Iron Foundry)
41 CODDING ST. • PROVIDENCE 1, R. I.

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Tamp! Truck Over! No Wait for Setting!

Use durable INSTANT-USE . . . a tough, plastic material which you simply shovel into hole—tamp—and run traffic over immediately. NO WAITING. Bonds tight to old concrete. Makes smooth, solid, heavy-duty patch. Withstands extreme loads. Keep a drum on hand for emergencies. Immediate shipment.

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Please send me complete INSTANT-USE information and details of FREE TRIAL OFFER—no obligation.

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Company _____
Address _____



When inquiring specify CP 524 — see handy form pages 2-3

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SOUTH BEND LATHES

VERSATILE ACCURATE



WRITE FOR CATALOG 100-F
Describes South Bend
Toolroom, Engine, and
Turret Lathes. Also, at-
tachments and tools.

The versatility and accuracy of South Bend Precision Lathes speed-up tool-room and production work. With them, a wide variety of exacting work can be efficiently machined to precision tolerances with less effort.



SOUTH BEND LATHE WORKS
439 E. Madison St., South Bend 22, Ind.

BUILDING BETTER LATHES SINCE 1906

When inquiring specify CP 525 — see handy form pages 2-3

MARLEY NOZZLES

3 Ways to Perfect Sprays

Atomizing Nozzle for any service requiring a mist-like spray

Two-Piece Nozzle is easily cleaned without removal from piping

One-Piece Nozzle . . . for maximum uniform output at lowest pressure



Write for Marley
Nozzle Bulletins



THE MARLEY COMPANY, INC. • KANSAS CITY 15, KANSAS

When inquiring specify CP 526 — see handy form pages 2-3

"That's Interesting"

Detecting Leaks in Underwater Fuel Pipelines

Flourescein, a chemical compound used in wartime to color the water around planes and pilots that were forced down, now helps detect leaks in underwater fuel pipelines. (From Calce Chem. Bylines)

New Cotton Yields 3 Bales Per Acre

Cotton averages about half a bale per acre, while a bale is considered a good crop. A new variety has produced three bales per acre in experimental planting. It is Coker 100, a wilt resisting variety.

Delivering Oil Under the Ocean

Standard Oil Co. of California utilizes ingenious underwater pipelines so that where there are no port facilities cargoes are handled between tanks on land and ships anchored beyond shallow shore waters. The lines terminate almost half a mile from shore. The ends of the underwater hoses are equipped with valves and a yoke with chains which extend to buoys marking the position of the terminals. The heavy rubber hose attached to the lines end is hauled up and connected to deck installation. The valves used at the end of the hose provide an absolutely blind end. (From the Flowline — Nordstron Valve Div. & Pittsburgh Equitable Meter Div. Rockwell Mfg. Co.)

Glass Auto Fenders

An automobile manufacturer is considering a molded automobile fender of glass fibre and plastics as a replacement part for models no longer being made, because the dies are not available. The fender is lighter, does not dent or crumple and can be produced at lower cost.

All Aluminum Door Does Not Tilt Outside

A new all aluminum one-piece garage door does not tilt outside when opening or closing. On raising it goes up and out of the way. No wall area or wall space is taken up. It takes only 5½ inches of ceiling room and only 2 inches of side wall space is needed. The 51 gauge employed gives strength equal to 16 gauge steel at one third the weight. (All Aluminum Door Co., 209 South State St., Chicago 4, Ill.)

From the Greek

The word Lecithin is derived from the Greek word meaning yolk of an egg.

For more information on product at right, specify CP 527
... see information request
blank between pages 2-3.

Blaw-Knox AGITATED REACTION VESSELS

STANDARD DESIGNS FOR MANY REQUIREMENTS • TAILOR-MADE UNITS FOR DIFFICULT PROBLEMS • TEMPERATURES, SUB ZERO TO 1000°F • PRESSURES, HIGH VACUUM TO 10,000 PSI



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BLAW-KNOX IMPLEMENTS THE PROCESS INDUSTRIES

CASE HISTORY No. 12

One in a series of factual experiences of a group of American manufacturers with Multi-wall Paper Bags.

COST COMPARISON (Per Ton)

	100-lb. Drums	100-lb. Paper Bags
Container cost . . .	\$14.00	\$2.60
Labor cost	4.16	1.03
Total bag and labor cost	\$18.16	\$3.63
Saving per ton, paper bags over drums		\$14.53

CLASS OF PRODUCT PACKED

CEMENT	FERTILIZER
CHEMICALS	POSS
FOODS	HYDROLYZES V

PRODUCT CHARACTERISTICS

ABRASIVE	GRANULAR V
CORROSIVE	HEAVY
DELICUESCENT	HYDROSCOPIC V
FLUFFY	LIGHT
FREE-FLOWING	VISCOUS

ST. REGIS PACKAGING SYSTEMS are designed to meet a wide range of product requirements and plant layouts. Packers are available in a variety of sizes and types, with filling speeds as high as twenty-four 100-lb. bags per minute — with one operator. Nearly 400 products — rock products, fertilizers, chemicals, foods, and feeds — are now being packaged in sturdy, low-cost multiwall paper bags.

small MANUFACTURER

makes big savings

WITH A ST. REGIS PACKAGING SYSTEM

Small manufacturers, as well as large ones, can benefit by the economies and efficiency of a St. Regis Packaging System.

An outstanding example of how successfully the system was applied by one small manufacturer is found in the case of the Stevens Soap Corporation, of Brooklyn, N. Y. This company manufactures soap powder which is used as a general purpose cleaning agent and as an ingredient of abrasive cleaners.

Faced with the high cost of drums being used for packaging of the powder, and confronted by a shortage of labor, the Company installed a labor-saving 100-LS St. Regis packer in 1944 and switched to multiwall paper valve bags. Here are some of the immediate results:

● Container costs dropped from \$14 to \$2.60 a ton — a saving of 81%.

● Packaging output, although limited because of material shortages, increased from 2,500 to 6,000 lbs. per hour.

● Packaging costs went down 80%.

● Labor requirements dropped from five to three men.

● Much valuable storage space was saved by compact Multiwalls.

● Dust was eliminated from the packaging operation.

So satisfied is the Company with its St. Regis Packaging System that it has ordered and received shipment of another 100-LS packer in anticipation of increased output when shortages of ingredients are eliminated.

Mail this coupon to get the detailed picture story of how a St. Regis Packaging System helped this small manufacturer achieve economical and efficient packaging.



Left: One man operates the St. Regis 100-LS packer.
Right: Conveyor takes filled bags to loading point.

MULTIWALL

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(Sales Subsidiary of St. Regis Paper Company)

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